## Myers, Lucretia

**From:** Kessler, Martin
**Sent:** Friday, August 30, 2013 3:45 PM
**To:** Group R7-Web
**Cc:** Whitley, Christopher;Kring, Debbie;Thomas, Hattie
**Subject:** Please post: New links for West Lake index
**Attachments:** MCE 08.08.13 memo to EPA.pdf; MCE 07.25.13 memo to EPA.pdf; Clay 08.23.13 response.pdf; Clay 08.23.13 response attachment.pdf; Clay 08.02.13 memo to EPA.pdf; McCaskill 08.23.13 response.pdf; McCaskill 08.23.13 response attachment.pdf; McCaskill 07.29.13 memo to EPA.pdf; Dooley 08.23.13 response.pdf; Dooley.08.05.13 memo to EPA.pdf

**Categories:** Yellow Category

Please make the following additions on the **West Lake index** at http://www.epa.gov/region7/cleanup/west_lake_landfill/index.htm ...

➢ First, replace the New! preceding the existing 1st link on the page (letter from Karl to MCE, 7/26).

***All the new links below should be:***
*- bulleted*
*- preceded by a* New!
*- with no line spaces above or below them*

***- Link texts are followed by page counts and corresponding attached PDFs (NOTE: Some links consists of 2 PDFs to be combined into 1 PDF, in order shown). Please rotate any horizontal pages to left or right, as appropriate).***

➢ Insert these two links below the existing 1st link…

- New! Letter from Missouri Coalition for the Environment to EPA Region 7 Administrator Karl Brooks, Aug. 8, 2013 (PDF) – 6 pp [MCE 08.08.13 memo to EPA.pdf]
- New! Letter from Missouri Coalition for the Environment to EPA Region 7 Administrator Karl Brooks, July 25, 2013 (PDF) – 10 pp [MCE 07.25.13 memo to EPA.pdf]

➢ Then add these links in the following order above the existing 1st link…

- New! Letter and Attachment from EPA Region 7 Administrator Karl Brooks to U.S. Rep. William Lacy Clay, Jr., Aug. 23, 2013 (PDF) – 17 pp [Clay 08.23.13 response.pdf + Clay 08.23.13 response attachment.pdf]
- New! Letter from U.S. Rep. William Lacy Clay, Jr., to EPA Region 7 Administrator Karl Brooks, Aug. 2, 2013 (PDF) – 24 pp [Clay 08.02.13 memo to EPA.pdf]
- New! Letter and Attachment from EPA Region 7 Administrator Karl Brooks to U.S. Sen. Claire McCaskill, Aug. 23, 2013 (PDF) – 16 pp [McCaskill 08.23.13 response.pdf + McCaskill 08.23.13 response attachment.pdf]
- New! Letter from U.S. Sen. Claire McCaskill to EPA Region 7 Administrator Karl Brooks, July 29, 2013 (PDF) – 2 pp [McCaskill 07.29.13 memo to EPA.pdf]
- New! Letter from EPA Region 7 Administrator Karl Brooks to St. Louis County Executive Charlie A. Dooley, Aug. 23, 2013 (PDF) – 13 pp [Dooley 08.23.13 response.pdf]
- New! Letter from St. Louis County Executive Charlie A. Dooley to EPA Region 7 Administrator Karl Brooks, Aug. 5, 2013 (PDF) – 2 pp [Dooley.08.05.13 memo to EPA.pdf]

*Thanks -MK*

August 8, 2013

Karl Brooks
Regional Administrator, Region 7
Environmental Protection Agency
11201 Renner Blvd.
Lenexa, KS 66219

RE: West Lake Landfill Superfund Site

Dear Administrator Brooks:

Thank you for the response to community concerns and questions regarding the West Lake Landfill. A set of questions was submitted to the EPA on July 26, 2013 before receiving the EPA's response. Below are new questions as a result of the letter sent by EPA and questions that need more clarity.

The West Lake Landfill impacted communities continue to be concerned about the safety of citizens living in proximity to the landfill and depend on the EPA to address concerns as the lead regulatory agency. Questions and concerns have been organized by issue, similar to the response from the EPA. In the next response from the EPA, please ensure that each question is identified and receives a direct response.

**Smoldering Event**

1. How close can the subsurface smoldering event approach OU-1, Area 1 before the EPA interjects and emergency actions are taken?

2. Does the EPA have a "red line" for its involvement?

3. Is there a scenario in which the EPA becomes the lead agency as it relates to the subsurface smoldering event? If so, please explain.

**Groundwater Monitoring Inside and Outside the Landfill**

4. Has the EPA received any information regarding groundwater flow at the West Lake Landfill from the USGS?

5. Is there a timeline for USGS involvement? If so, will the EPA share the expected timeline?

6. Where exactly will the off-site groundwater samples be collected surrounding the West Lake Landfill Superfund Site?

7. The letter dated 7/26/2013 states "the EPA will have a better understanding of current groundwater conditions after the Agency...reviews the next two rounds of groundwater sampling." Considering groundwater sampling is conducted on a quarterly basis, and at the EPA meeting on 6/25/2013, administrator Karl Brooks stated that it could be as little

as 400 days** before the subsurface landfill fire hits the radioactive waste, why does the EPA propose to wait 6 months (180 days) before understanding groundwater conditions?

**This number was calculated by the administrator based on the assumption that the fire is 1,200 feet away from OU-1, using a maximum SSE progression of 3ft/day. However, the current movement of the fire is figured at around .5ft/day with a maximum of 2ft/day, putting the minimum time before the fire hits the radioactive wastes at 600 days.

8. How will the USGS data be made publicly available?

9. When will the USGS data be publicly available?

**National Remedy and Review Board Recommendations**

10. What studies/investigation did the National Remedy and Review Board recommend EPA Region 7 conduct to better understand the West Lake Landfill? Please include all recommendations from the NRRB.

11. Did EPA Region 7 provide the NRRB with concerns or reports from the general public?

12. Did Region 7 provide NRRB with Dr. Bob Criss' report submitted to the EPA on March 15, 2013?

13. What information has the NRRB received as it relates to the subsurface smoldering event?

14. Has the presence of the subsurface smoldering event triggered further recommendations from the NRRB as it relates to OU-1?

**Radium in Groundwater**

15. Can the EPA explain why levels of Radium-226 and Radium-228 are above the Maximum Contaminant Level (MCL) throughout the landfill, outside of Operable Unit 1? For example: The Responsiveness Summary from 2008 (page 3) states "only four wells exhibited a total radium concentration above the MCL of 5 picocuries per liter (pCi/L)" with the maximum reading being 6.33PiC/l. A map in the Groundwater Monitoring report dated December 14th displays 20 wells that show radium levels above 5pCi/l with PZ-101-SS reading 32.01pCi/l, which is outside of Area-1 and Area-2 of Operable Unit 1.

16. With the increase in the concentration of Radium found the wells, how can the EPA continue to state that the levels of Radium being read are naturally occurring, as the EPA stated at the January 17 public meeting at the Machinists Union Hall?

17. If there is "little to no Ra-228" in the landfill waste at West Lake Landfill OU-1, where is the Radium 228 in the groundwater coming from?

18. How can the EPA assert that "recent groundwater results indicate that contamination is not migrating substantial distances from its original location where the radioactive waste was disposed" when wells outside of OU-1 and OU-2 consistently read radium levels higher than the MCL and no reports of off-site testing have yet been posted?

21. What testing protocol or investigation will be needed to ascertain the source of the radioactivity in the groundwater?

22. In the groundwater reports from tests in August 2012 and April 2013, the EPA posted data for both combined total radium 226 and 228 and combined dissolved radium 226 and 228. It is our understanding that total radium comes from unfiltered samples while dissolved radium is gathered from filtered samples, thus the total radium should be higher than the dissolved radium for its respective sampling location. How does the EPA account for the last two groundwater reports reading higher dissolved radium than total radium in 30% of the wells?

**Long Term Risks**

23. The EPA said in its response: "The EPA is overseeing work by the potentially responsible parties which includes the evaluation of risk associated with multiple disasters such as fire, tornado, and earthquake." Is the EPA or PRPs working on a new Risk Assessment for West Lake Landfill? If so, when will it be published? If not, does the EPA intend to provide a new Risk Assessment that includes landfill fire risks?

24. Is the EPA or PRPs taking into consideration the possibility of concurrent disasters taking place in its risk assessment?

**Leached Barium Sulfate**

28. In the EPA response on Leached Barium Sulfate, too many assumptions are made and more clarity is needed. The EPA's justification that Cotter Corporation found the materials valuable and therefore "it is likely that very little of this material was left on-site" is an inadequate assumption about what was actually dumped at the West Lake Landfill as it relates to public health. Also, Atomic Energy Commission documents appear to contradict the basis of what was mixed with the 8,700 tons of Leached Barium Sulfate. It's MCE's understanding the material eventually shipped to Colorado sat outside, unprotected from the elements for years. Has the EPA considered the possibility that the soils from Latty Avenue contain highly soluble radioisotopes based on the exposure of the material at Latty to heavy rains over the course of several years?

29. The EPA's understanding of what was dumped at the West Lake Landfill is inaccurate as recently as 2008 based on the Atomic Energy Commission's 1974 investigation of Latty Avenue, which has been shared with EPA Region 7. Does the EPA plan to continue basing its understanding of what was dumped at West Lake Landfill on what appear to be inaccurate NRC reports?

30. Has the EPA analyzed the West Lake Landfill as recommended by Dr. Criss in point 8 of his report submitted March 15, 2013? If so, where in the volumes of reports on West Lake Landfill can this information be found? EPA's guidance here is most appreciated.

> "Additional study of the site is needed. The character of the radioactive materials and processing wastes originally dumped at West Lake Landfill needs to be determined. Relevant, old chemical and radiological analyses of these materials probably exist, and physical samples may still exist. In lieu of these being found, radioactively-contaminated material from the landfill needs to be excavated and collected, processed by standard mineral separation techniques, and then analyzed and examined to determine the chemical, physical and radiological character of the separates of concern. Accurate determination of elemental ratios including Ra/Ba, Ra/U, Ba/U, Th/U, Ba/SO4, etc. by ICP-MS and other modern techniques would clearly help. Groundwater analyses need to include major elements, physical parameters such as electrical conductivity, and stable isotope data so that radionuclides can be definitively traced to their sources by well-understood methods (e.g., Criss, 1999; Hasenmueller and Criss, 2013). It is not acceptable that so little is known about this radwaste after more than 30 years of "study". Regular monitoring of the levels and radionuclide contents of groundwater also need to be undertaken. Several dozen new monitoring sites must be developed to establish conditions at least 1000 feet away from the landfill boundaries, particularly north and northwest of Area 2, to establish the scale of groundwater contamination and migration."

31. Was inductively coupled plasma mass spectrometry (ICP-MS) used to analyze soil samples in OU-1?

**Perimeter Fence**

32. Why was the fence along OU-1 Area 1 moved closer to the St. Charles Rock Road?

33. When was the new fence constructed?

34. By whose order?

**Community Interviews**

35. Can EPA provide evidence on its website to support that community interviews were conducted between 1994 and 2013?

36. How have the community interviews guided the EPA's response to community concerns? This question was not answered in the EPA's last response.

37. EPA Superfund decision making is supposed to be guided in part by what local communities want. How does EPA qualify and/or quantify community concerns or preferred remedial action when creating a Record of Decision, or in this case, an amended ROD?

**Public Record**
38. Will the EPA provide digital records on its website of all documents in the "administrative record" and "public record" concerning West Lake Landfill?

39. Does the EPA have different delineations for "administrative record" and "public record?"

**Other Superfund Sites**
40. How many Superfund Sites in Region 7 involve radiological contamination?

41. Has EPA Region 7 executed a ROD at a radioactive Superfund Site? If so, which ones and when?

**Schedule**
42. Does the EPA have a schedule moving forward that it can provide regarding the decision making process?

Please send a response to Ed Smith at the Missouri Coalition for the Environment and Dawn Chapman who lives near the West Lake Landfill.

Thank you for your consideration.

Sincerely,

West Lake Landfill Impacted Communities & the Missouri Coalition for the Environment

Ed Smith – esmith@moenviron.org – (314) 727-0600
Dawn Chapman – dmcteacher@gmail.com

July 25, 2013

Karl Brooks
Regional Administrator, Region 7
Environmental Protection Agency
11201 Renner Blvd.
Lenexa, KS 66219

RE: West Lake Landfill Superfund Site

Dear Mr. Brooks:

The West Lake Landfill impacted communities request answers to the below questions. During a June 26, 2013 meeting with Administrator Brooks, the Missouri Coalition for the Environment agreed to work with community members to only send questions regarding the landfill once a month. The Environmental Protection Agency has yet to respond to questions submitted in May and June of 2013. The West Lake Landfill impacted communities continue to be concerned about the safety of citizens living in proximity to the landfill and depend on the EPA to address our concerns as the lead regulatory agency. The undersigned community members expect the EPA to provide a written response within 4 weeks of receiving this letter.

1. How close can the subsurface smoldering event approach West Lake Landfill before the EPA interjects and emergency actions are taken? Meaning, does the EPA have a "red line" for its involvement?

2. Has the EPA received any information regarding groundwater flow at the West Lake Landfill from the USGS? Is there a timeframe for USGS involvement?

4. Where exactly will the off-site groundwater samples be collected surrounding the West Lake Landfill Superfund Site? Will a sampling plan be made available for comment before sampling is conducted?

5. Will EPA provide groundwater sampling (both on-site and off-site) locations, results, and plans with the community?

6. How does the EPA explain levels of Radium-226 and Radium-228 outside of Operable Unit 1? For example: The Responsiveness Summary from 2008 (page 3) states "only four wells exhibited a total radium concentration above the MCL of 5 picocuries per liter (pCi/I)" with the maximum reading being 6.33PiC/l. A map in the Groundwater Monitoring report dated December 14th displays 20 wells that show radium levels above 5pCi/l with PZ-l0l-SS reading 32.01pCi/l, which is outside of Area-l and Area-2 of Operable Unit 1.

a) With the increase in the concentration of Radium from the wells, how can the EPA continue to state that the levels of Radium being read are naturally occurring?

b) Can the EPA explain the significant increase in wells that showed Radium above 5 PiC/l?

7. Does the EPA contend that 8,700 tons of leached barium sulfate from Latty Avenue was mixed with 38,000 tons to 39,000 tons of "clean material" as stated in the Responsiveness Summary (page 13)?

8. What studies/investigation did the National Remedy and Review Board recommend EPA Region 7 conduct to better understand the West Lake Landfill?

9. Why was the fence along OU-1 Area 1 moved closer to the St. Charles Rock Road? What day(s) was the new fence constructed? By whose order?

10. Will the EPA provide digital records on its website of all documents in the "administrative record" and "public record" concerning West Lake Landfill?

11. How many Superfund Sites in Region 7 involve radiological contamination? Has EPA Region 7 executed a ROD at a radioactive Superfund Site? If so, which ones and when?

12. How can the EPA conclude that the radioactive materials are contained based on the ASPECT plane, which only measured gamma radiation up to one foot, while the radioactive wastes are buried up to 15 feet deep and there is no liner to prevent groundwater contamination?

13. Has the EPA conducted community interviews of "impacted communities" in the last ten years? If yes, does the EPA have evidence to support that community interviews were conducted? If yes, how have community interviews guided the EPA's response to community concerns? If no, does the EPA plan on conducting community interviews prior to the next Record of Decision?

Thank you for your consideration.

Sincerely,

West Lake Landfill Impacted Communities & MCE

The West Lake Landfill impacted communities continue to be concerned about the safety of citizens living in proximity to the landfill and depend on the Environmental Protection Agency (EPA) to address our concerns as the lead regulatory agency. The undersigned community members expect the EPA to provide a written response to the attached questions within 4 weeks of receiving this letter.

| Signature | First (Print) | Last (Print) | Phone | Address | City | ZIP |
|---|---|---|---|---|---|---|
| Mary Catherine Dunn | MARY | DUNN | 314-739-7450 | 3223 PARKWOOD LN | MARYLAND HGTS | 63043 |
| Sandra L Buzzetta | Sandy | BUZZETTA | 3144980633 | 192 Hunters POINTE | ST. Charles | 63304 |
| Irma Kennebeck | IRMA | KENNEBECK | 314-768-1826 | 3221 McKELVEY RD | BRIDGETON | 63044 |
| Debi Dissen | Debi | Disser | 314 629-0705 | 908 Patrick Dr | ST. John | 63114 |
| Jeanne Dercer | JEANNE | DERCER | 849.2404 314. | 8840 GLENWOOD DR. | ST. LOUIS | 63126 |
| Deann Deimeke | DEANN | DEIMEKE | 314 738-0957 | 308 Little Ave | Mt. Hgts | 63045 |
| Linda Leib | Linda | Leib | 34 291-7956 | 11691 Donnycove Ln | Maryland HTS | 63043 |
| M Richards | Fe | Richards | | 12066 Autumn Lakes Dr. | Mayland Hts | 63043 |
| Saul Fein | Saul | Fein | | " | " | " |
| John Fischer | JOHN | Fischer | 209-0227 | 383 Autumn Trace Dr | Maryland Hts | 63043 |
| Brad Chenoweth | BRAD | CHENOWETH II | 314 482-6239 | 3318 GREENBRIDGE | BRIDGETON | 63044 |

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| Signature | First (Print) | Last (Print) | Phone | Address | City | ZIP |
|---|---|---|---|---|---|---|
| Michael Williams | MICHAEL | WILLIAMS | 314 813-4533 | 1308 COLUMBUS DR ST LOUIS MO 63138 | ST LOUIS | 63138 |
| M Chris Williams | Mary Christine | Williams | 314-667-6332 | 1308 Columbus Dr St Louis Mo | St. Louis | 63138 |
| Susan Siegler | Susan | Siegler | 314-971-4595 | 950 Chula Drive | Hazelwood | 63042 |
| Margaret Krahman | Margaret | KRAHMAN | 314-434-1500 | 12087 Fleetwood | Maryland Hts | 63043 |
| Elaine Stern | Elaine | Stern | 3149653049 | 1312 DOMINICA | STL | 63138 |
| Kathy Bell | Kathy | Bell | 314-298-0223 | 12736 San Clemente | Bridgeton | 63044 |
| Chuck Bell | Chuck | Bell | " | " | " | " |
| Katherine Randolph | Katherine | Randolph | 314-291-7364 | 3372 San Seville Ct | Bridgeton | 63044 |
| Sandy Schwartz | SANDY | SCHWARTZ | 314-768-1828 | 3221 McKelvey Rd | BRIDGETON | 63044 |
| Mary Ann Ford | Mary Ann | Ford | 314-302-7593 | 800 Keeneland Rd | Florissant | 63034 |
| Rhonda Steelman | Rhonda | Steelman | 314 800 7457 | 3412 Ludlow Ave | Bridgeton | 63044 |

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| Signature | First (Print) | Last (Print) | Phone | Address | City | ZIP |
|---|---|---|---|---|---|---|
| Mary McCarthy | MARY | McCARTHY | 3146095523 | 2419 Wexford | Maryland Hts | 63043 |
| Jo S. Janitch | JIo | Janitch | 314-739-6470 | 12004 Autumn Lake Dr. | Maryland Hts, Maryland | 63043 |
| Cindy Finnegan | Cindy | Finnegan | 314 566 9630 | 1836 Tawny Ash Dr | St L | 63146 |
| Stacy R Chenaweth | Stacy | Chenaweth | (314) 809-5946 | 3318 Greenbridge Dr | Bridgeton | 63044 |
| Todd Nickel | Todd | Nickel | 314 685-6297 | 12141 Hillcrest | Maryland Hgts | 63043 |
| Megan Richardson | Megan | Richardson | 314-608-3036 | 1 Yankee Jim Ct | St. Peters | 63376 |
| Katie Keeven | Katie | Keeven | 314-223-7559 | 3314 Bridgeton Trails Dr. | Bridgeton | 63044 |
| Rhonda Steelman | Rhonda | Steelman | 314-800-7455 | 3412 Ludlow Ave | Bridgeton | 63044 |
| Randy Hein | RANDY | HEIN | 314-398-1700 | 4137 SCOTCH | | 63044 |
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|---|---|---|---|---|---|---|
| Stacy L Chenoweth | Stacy | Chenoweth | (314) 809-5946 | 3318 Greenbridge Dr. | Bridgeton | 63044 |
| Todd Nicked | Todd | Nicked | (314) 6856297 | 12141 Hillcrest Pl | Maryland Hghts | 63043 |
| Bob Nowlin | Bob | Nowlin | 314-291-4689 | 3386 Tortosa Dr | Bridgeton | 63044 |
| Barbara J. Bullock | | | 314 291 - 5847 | 11561 Breezeway | Bridgeton | 63044 |
| Martha Hall | Martha | Hall | 314-398-0163 | 11916 Glenpark | Maryland Hts | 63043 |
| Frank Licata | FRANK | LICATA | 314-739-2841 | 3526 EL FERROL CT | BRIDGETON | 63044 |
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| Signature | First (Print) | Last (Print) | Phone | Address | City | ZIP |
|---|---|---|---|---|---|---|
| Susan Folle | Susan | Folle | 636-887-0883 | 1604 Silver Hills Ct | Wentzville | 63385 |
| Jennifer Smith | Jennifer | Smith | 636 6963701 | 11 | 11 | 11 |
| Gwendolyn Verhoff | Gwendolyn | Verhoff | 314 435-6343 | 10450 Decker | Overland | 63114 |
| Marilyn Caldwell | Marilyn | Caldwell | 314 838 9518 | 809 Keeneland Rd | Florissant | 63034 |
| Mary McCarthy | MARY | McCARTHY | 3146095563 | 2419 Wexford | Maryland Hts | 63043 |
| Clare Duffy | Clare | Duffy | 314 291-3144 | 3110 Autumn Tr. Dr. | Maryland Hts | 63043 |
| Vernita Wilson | Vernita | Wilson | 314-739-8405 | 3538 El Ferrol Ct. | Bridgeton | 63044 |
| Meagan Richardson | Meagan | Richardson | 314-608-3036 | 1 Yankee Jm Ct | St. Peters | 63376 |
| ~~Pat Marsell~~ | ~~Pat~~ | | | | | |
| Pat Marsell | PAT | Marsell | 314-739-2119 | 3521 El Ferrol Ct | Bridgeton | 63044 |
| Robert Duiser Sharon Duiser | Bob Sharon | Duiser Duiser | 314-739-0598 | 3880 Poplin Pl Ct Bridgeton, Mo. 63044 | Bridgeton | 63044 |

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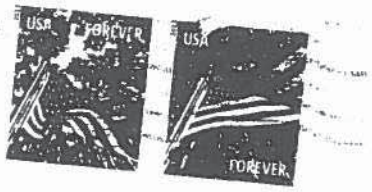
| Signature | First (Print) | Last (Print) | Phone | Address | City | ZIP |
|---|---|---|---|---|---|---|
| Jennifer L Huber | Jennifer | Huber | 314-344-9052 | 2524 Creve Coeur Mill #9 | Maryland Heights | 63043 |
| Ferdinand E Fetsch | FERDINAND | FETSCH | 314-291-3021 | 3336 TUSCANY HILLS C | BRIDGETON | 63044 |
| J. S. Janitch | JLO | Janitch | 314-739-6470 | 12004 Autumn Lak | Maryland Hts. | 63043 |
| Cynthia Finnegan | Cynthia | Finnegan | 3145669630 | 1836 Tawny Ash Dr | STL MO | 63146 |
| Bill Wilson | BILL | WILSON | 314-739-8405 | 3538 EL FERROL CT. | BRIDGETON | 63044 |
| Sr Ellen Orf CSJ | Sr Ellen | Orf | 636 293 8253 | 204 N. MAIN ST | O'FALLON | 63366 |
| Randy Hein | RANDY | HEIN | 314-298-1701 | 4137 SCOTCH | BRIDGETON | 63044 |
| Katie Keevan | Katie | Keevan | 314-223-7559 | 3314 Bridgeton Trails Dr | Bridgeton | 63044 |
| Jodi Willard | Jodi | Willard | 314-706-4844 | 11846 Administration | Bridgeton | 63044 |
| | | | | | | |
| | | | | | | |

Ed Smith
6267 Delmar Blvd E
University City, MO 63130




Director Brooks
11201 Renner Blvd
Lenexa, KS 66219

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
11201 RENNER BOULEVARD
LENEXA, KS 66219

AUG 23 2013

OFFICE OF
THE REGIONAL ADMINISTRATOR

The Honorable William Lacy Clay
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Clay:

Thank you for your letter of August 2, 2013, to the U.S. Environmental Protection Agency about the West Lake Landfill Site in Bridgeton. I appreciate your responsibility to your constituents who are concerned about the conditions at the West Lake Landfill Site. This agency has heard similar concerns expressed at our public meetings. We recently addressed many of these issues in response to questions posed by the Missouri Coalition for the Environment. For your convenience, I am enclosing copies of the EPA's responses, as well as my recent letter to Senator McCaskill.

Currently, the site does not pose a risk to public health as there are no complete exposure pathways from the radiological waste to human receptors. While groundwater beneath the site contains some contaminants including radium, no one is using this water for any purposes. The site is fenced to prevent access. Air monitoring by the Missouri Department of Natural Resources and the Missouri Department of Health and Senior Services shows no elevated levels of radiation in the air. The EPA is closely monitoring the work at the Bridgeton Sanitary Landfill being done pursuant to an order issued by the Missouri Attorney General with the site owner to address the subsurface oxidation event.

You discuss the elements of the May 2008 Record of Decision and the EPA's path forward. The May 2008 ROD selected as a remedy capping the waste in place using a multi-layer engineered cap, with groundwater monitoring and institutional controls. In addition, the Superfund process includes a review every five years of the protectiveness of the remedy, and if any problems are noted, corrective actions are taken. After the ROD was issued, the EPA continued to receive questions from the public on the remedy. The EPA responded by tasking the responsible parties to perform a Supplemental Feasibility Study under EPA oversight to address these questions. The SFS was completed in late 2011.

At this time, the responsible parties are supplementing the SFS by completing additional work. The work includes the collection of another round of groundwater sampling. The EPA, with the assistance of the U.S. Geological Survey, will study the results of four quarters of groundwater sampling collected this past year to determine if this pathway poses a threat to human health or the environment. In addition to this groundwater evaluation, the responsible parties are also completing, under EPA oversight, additional studies to more fully evaluate excavation, treatment, and cap designs, among other things.

As a point of clarification, the FUSRAP designation is made either by the U.S. Department of Energy, based on criteria set forth in DOE policy or by Congress. The EPA plays no role in selecting sites for FUSRAP. But regardless of whether the EPA manages a site or a site enters the FUSRAP program in which the U.S. Army Corps of Engineers has lead responsibility, cleanup of the site is required by law to

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be performed in accordance with the Superfund process. In other words, the Corps would follow the same legal steps of the Superfund law as the EPA follows.

In accordance with the Superfund law and the National Contingency Plan, the EPA is following a course to reach implementation of a remedy. That roadmap is enclosed. Due to uncertainties in completing the process steps outlined, I cannot give you a precise timeline for the EPA to implement the remaining steps and construct the remedy.

We will continue to keep you and your staff informed of updates regarding the West Lake Landfill Superfund Site. If we can be of any further assistance, please feel free to contact me at 913-551-7006, or your staff may call LaTonya Sanders, Congressional Liaison, at 913-551-7555.

Sincerely,

Karl Brooks

Enclosures

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
11201 RENNER BOULEVARD
LENEXA, KS 66219

AUG 23 2013

OFFICE OF
THE REGIONAL ADMINISTRATOR

The Honorable Claire McCaskill
United States Senator
Washington, D.C. 20510

Dear Senator McCaskill,

Thank you for your letter of July 29, 2013, to the U.S. Environmental Protection Agency about the West Lake Landfill in Bridgeton. The EPA appreciates your interest in the Bridgeton and West Lake landfills. The EPA continues to work closely with the Missouri Department of Natural Resources and the Missouri Attorney General's Office. The Agency for Toxic Substances and Disease Registry and part of the U.S. Department of Health and Human Services, is advising the EPA about human health issues related to the landfills and works closely with the Missouri Department of Health and Senior Services. The EPA also maintains active communication with ATSDR and MDHSS.

The landfills' responsible parties will collect the last quarterly round of groundwater sampling with the EPA oversight in October 2013. During calendar year 2014, additional work and data evaluations will be performed by the PRPs under EPA oversight. The U.S. Geological Survey, as outlined in the enclosed document, is advising this agency about the groundwater issues at West Lake. The process steps outlined on the attachment will give us some time to complete in order to give the EPA the evaluations needed to inform a West Lake remedy selection. Therefore, I cannot provide a precise timeline for the EPA to select and construct the remedy at this time. I will continue to keep you well informed about this agency's actions and welcome your involvement.

For your convenience, I am enclosing correspondence that the EPA Region 7 recently provided to the Missouri Coalition for the Environment responding to questions about the current conditions. I am also enclosing my recent letter to Congressman Clay, as well as a document which identifies steps to remedy implementation at West Lake Landfill.

We will continue to keep you and your staff informed of updates regarding the West Lake Landfill Superfund Site. If we can be of any further assistance, please feel free to contact me at 913-551-7006, or your staff may call LaTonya Sanders, Congressional Liaison, at 913-551-7555.

Sincerely,

Karl Brooks

Enclosures

RECYCLED 100 FIBER

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
11201 RENNER BOULEVARD
LENEXA, KS 66219

AUG 23 2013

OFFICE OF
THE REGIONAL ADMINISTRATOR

Mr. Ed Smith
Missouri Coalition for the Environment
6267 Delmar Boulevard, Suite 2E
St. Louis, Missouri 63130

RE: West Lake Landfill Superfund Site

Dear Mr. Smith and Ms. Chapman:

This responds to your letters of July 25, 2013, and August 8, 2013, with your questions included.

Should you have questions regarding these responses, please contact Region 7 Superfund Division Director, Cecilia Tapia, at 913-551-7733 or tapia.cecilia@epa.gov.

Sincerely,

Karl Brooks

Enclosures

cc: Dawn Chapman

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**Response to July 25, 2013 Letter**

1. How close can the subsurface smoldering event approach West Lake Landfill before the EPA interjects and emergency actions are taken? Meaning, does the EPA have a "red line" for its involvement?

   A. EPA internal experts, as well as the U.S. Geological Survey (USGS), are evaluating the current subsurface smoldering event (SSE) data and make recommendations. The potentially responsible parties (PRPs) are developing contingency plans to address these issues, and EPA and MDNR are and will be evaluating these contingency plans.

2. Has the EPA received any information regarding groundwater flow at the West Lake Landfill from the USGS? Is there a timeframe for USGS involvement?

   A. EPA has tasked the PRPs to collect additional information on groundwater at the site. This is ongoing. EPA has tasked USGS to help interpret the data as it is received so that it will to inform future decision-making.

3. Where exactly will the off-site groundwater samples be collected surrounding the West Lake Landfill Superfund Site? Will a sampling plan be made available for comment before sampling is conducted?

   A. EPA collected off-site groundwater samples at six private wells more than one mile northeast of the West Lake Landfill in July 2013 to help assess background concentrations of contaminants in the alluvial aquifer. These wells were chosen by USGS and EPA because they are the closest to the site.

4. Will EPA provide groundwater sampling (both on-site and off-site) locations, results, and plans with the community?

   A. Yes, we have done so and will continue to do so as the data becomes final. Sampling results are posted to the EPA Region 7 web site.

5. How does the EPA explain levels of Radium-226 and Radium-228 outside of Operable Unit 1? For example: The Responsiveness Summary from 2008 (page 3) states "only four wells exhibited a total radium concentration above the MCL of 5 picocuries per liter (pCi/L)" with the maximum reading being 6.33pCi/L. A map in the Groundwater Monitoring report dated December 14th displays 20 wells that show radium levels above 5pCi/L with PZ-101-SS reading 32.01pCi/L, which is outside of Area-1 and Area-2 of Operable Unit 1.

   a) With the increase in the concentration of Radium from the wells, how can the EPA continue to state that the levels of Radium being read are naturally occurring?

   A. EPA assesses the 2012 groundwater data as not proving or disproving the existence of a groundwater contaminant plume at the site. For this reason, EPA has requested that the PRPs conduct three additional rounds of groundwater sampling in 2013 which will enable USGS to provide a more comprehensive picture of current groundwater conditions at the site.

   b) Can the EPA explain the significant increase in wells that showed Radium above 5 pCi/L?

A. USGS is providing technical assistance to EPA to understand and interpret the groundwater results from the 2012 and upcoming 2013 sampling events and determine the background contribution to contaminant concentrations in the aquifer beneath the site.

6. Does the EPA contend that 8,700 tons of leached barium sulfate from Latty Avenue was mixed with 38,000 tons to 39,000 tons of "clean material" as stated in the Responsiveness Summary (page. 13)?

A. It is likely that the soil removed from the Latty Avenue site and mixed with the barium sulfate residue contained residual amounts of the other radiological wastes stored there. However, it is impossible to say how much radiological material this soil contained. EPA has extensive analytical results for the materials actually present in West Lake Landfill.

7. What studies/investigation did the National Remedy and Review Board recommend EPA Region 7 conduct to better understand the West Lake Landfill?

A. The National Remedy and Review Board (NRRB) recommended that: the excavation volume for a full removal of the radiological material be calculated; a partial excavation alternative be evaluated; treatment technologies for the waste involving apatite and/or phosphate be evaluated; the present value costs for all alternatives be recalculated using a 7% discount rate; alternative landfill cap designs be evaluated; and fate and transport modeling of radionuclides in groundwater be conducted. EPA Region 7 directed the PRPs to do these additional studies in a letter dated October 12, 2012. The PRPs are doing these studies under EPA oversight.

8. Why was the fence along OU-l Area 1 moved closer to the St. Charles Rock Road? What day(s) was the new fence constructed? By whose order?

A. In March 2013, EPA requested that the PRPs install a fence on the southeast side of OU-1 Area 1, between this landfill cell and the adjacent North Quarry Landfill cell, to prevent workers responding to the subsurface smoldering event at the Bridgeton Sanitary Landfill from accidentally entering Area 1. The PRPs agreed to do this, and also decided to upgrade existing perimeter fences around both OU-1 areas at the same time. The fence installation began in late May 2013 and concluded in June.

9. Will the EPA provide digital records on its website of all documents in the "administrative record" and "public record" concerning West Lake Landfill?

A. EPA recently assessed the condition of the Administrative Record stored in Bridgeton and determined that access to these documents needs to be improved. EPA is considering options for improving access and/or placing these documents on our webpage.

10. How many Superfund Sites in Region 7 involve radiological contamination? Has EPA Region 7 executed a ROD at a radioactive Superfund Site? If so, which ones and when?

A. There are five sites in the Superfund remedial program in Region 7 with radiological contamination: the St. Louis Airport Sites (SLAPS), West Lake Landfill, Weldon Springs, the Lake City Army Ammunition Plant (LCAAP) and the Iowa Army Ammunition Plant (IAAP). ROD-selected remedial actions for radiological contamination have been implemented at Weldon Springs (1997-2001), Iowa Army Ammunition Plant (RA ongoing now), the St. Louis Airport Sites (RA ongoing now), and Lake City Army Ammunition Plant (2008-2009).

11. How can the EPA conclude that the radioactive materials are contained based on the ASPECT plane, which only measured gamma radiation up to one foot, while the radioactive wastes are buried up to 15 feet deep and there is no liner to prevent groundwater contamination?

A. The intent of the ASPECT flyover was to determine if any surface radiological materials had migrated. The results showed that this had not occurred. To define the extent of radiological materials at depth, extensive soil and waste data collected during the Remedial Investigation defined the extent of the radioactive material in OU1.

12. Has the EPA conducted community interviews of "impacted communities" in the last ten years? If yes, does the EPA have evidence to support that community interviews were conducted? If yes, how have community interviews guided the EPA's response to community concerns? If no, does the EPA plan on conducting community interviews prior to the next Record of Decision?

A. EPA conducted initial community interviews in 1994. Since that time, EPA has canvassed community members, elected officials, and other interested stakeholders by phone and at community meetings throughout the history of the site. On January 9, 2013, EPA conducted door-to-door interviews. Follow-up phone calls were conducted with 20 community points of contact, which included residents, businesses, churches, and academia. In March 2013, numerous contacts were made with members of the Spanish Village community and the nearby trailer park. The focus of the March interviews was to share information about upcoming EPA meetings and determine how area residents and other local stakeholders preferred receive information from EPA, whether by mail, telephone, internet, etc. Community interviews and interactions are consistently used to provide EPA with information about community concerns. Social media are also used to gauge the community climate. EPA will continue to interact with community members and other West Lake Landfill stakeholders throughout the Superfund process. EPA followed up later in March and April 2013 with targeted interviews of community members.

**Response to August 8, 2013 Letter**

**Smoldering Event**

1. How close can the subsurface smoldering event approach OU-1, Area 1 before the EPA interjects and emergency actions are taken?

**A.** EPA internal experts, as well as the U.S. Geological Survey (USGS), are evaluating the current subsurface smoldering event (SSE) data and make recommendations. The potentially responsible parties (PRPs) are developing contingency plans to address these issues, and EPA and MDNR are and will be evaluating these contingency plans.

2. Does the EPA have a "red line" for its involvement?

**A.** EPA internal experts, as well as the U.S. Geological Survey (USGS), are evaluating the current subsurface smoldering event (SSE) data and make recommendations. The potentially responsible parties (PRPs) are developing contingency plans to address these issues, and EPA and MDNR are and will be evaluating these contingency plans.

3. Is there a scenario in which the EPA becomes the lead agency as it relates to the subsurface smoldering event? If so, please explain.

**A.** No. MDNR administers the approved solid waste disposal program in Missouri and issued a solid waste landfill permit for the cell with the SSE. MDNR's permit and its solid waste regulations that apply to the landfill are not enforceable by EPA. EPA has no authority to address Subtitle D (solid waste) landfills. This authority was fully delegated to the state.

**Groundwater Monitoring Inside and Outside the Landfill**

4. Has the EPA received any information regarding groundwater flow at the West Lake Landfill from the USGS?

**A.** EPA has asked USGS to review existing data and the new groundwater sampling results as they become available. USGS will not finalize its assessment of hydrologic conditions at the site until after the results of all four groundwater sampling events are validated.

5. Is there a timeline for USGS involvement? If so, will the EPA share the expected timeline?

**A.** USGS will not finalize its assessment of hydrologic conditions at the site until after the results of all four groundwater sampling events are validated. USGS will likely continue to assist EPA in interpreting this data through the proposed plan stage.

6. Where exactly will the off-site groundwater samples be collected surrounding the West Lake Landfill Superfund Site?

**A.** EPA collected off-site groundwater samples at six private wells more than one mile northeast of West Lake in July 2013 to help assess background concentrations of contaminants in the alluvial aquifer.

These wells were chosen because they are the closest to the site. Results from these wells will be released with the results of the July 2013 on-site groundwater sampling event.
7. The letter dated 7/26/2013 states "the EPA will have a better understanding of current groundwater conditions after the Agency...reviews the next two rounds of groundwater sampling." Considering groundwater sampling is conducted on a quarterly basis, and at the EPA meeting on 6/25/2013, administrator Karl Brooks stated that it could be as little as 400 days** before the subsurface landfill fire hits the radioactive waste, why does the EPA propose to wait 6 months (180 days) before understanding groundwater conditions?

**This number was calculated by the administrator based on the assumption that the fire is 1,200 feet away from OU-1, using a maximum SSE progression of 3ft/day. However, the current movement of the fire is figured at around .5ft/day with a maximum of 2ft/day, putting the minimum time before the fire hits the radioactive wastes at 600 days.

**A.** This statement was not made by Administrator Brooks but by a representative of MDNR. This number was calculated based on the assumption that the event is 1,200 feet away from OU-1, using a maximum SSE progression of 3ft/day. However, the current movement of the event is now estimated at around .5ft/day with a maximum of 2ft/day, extending the minimum time before the event reaches OU-1 at 600 days. EPA believes the contingency measures required under the Missouri Attorney General's consent order with Republic will prevent the subsurface oxidation event from reaching the radioactively contaminated landfill cells. However, EPA Region 7 continues to closely monitor the events in the Bridgeton Sanitary Landfill, with the assistance of EPA's Office of Research and Development. The groundwater sampling is being conducted to assess possible migration of the radiological wastes in OU-1 to groundwater, a process that is separate from the migration of the subsurface oxidation event in the South Quarry Landfill.

8. How will the USGS data be made publicly available?

**A.** The USGS assessment of hydrologic conditions at the site will be released when it is finalized. It will be placed on EPA's website.

9. When will the USGS data be publicly available?

**A.** The USGS assessment of hydrologic conditions at the site will be released when it is finalized. This will necessarily occur after the fourth round of groundwater sampling occurs in October 2013 and the final data report is received in early 2014.

**National Remedy and Review Board Recommendations**

10. What studies/investigation did the National Remedy and Review Board recommend EPA Region 7 conduct to better understand the West Lake Landfill? Please include all recommendations from the NRRB.

**A.** The NRRB recommended that: the excavation volume for a full removal of the radiological material be calculated; a partial excavation alternative be evaluated; treatment technologies for the waste involving apatite and/or phosphate be evaluated; the present value costs for all alternatives be recalculated using a 7% discount rate; alternative landfill cap designs be evaluated; and fate and

transport modeling of radionuclides in groundwater be conducted. EPA Region 7 asked the PRPs to do these additional studies in a letter dated October 12, 2012. The PRPs have agreed to do these studies.

11. Did EPA Region 7 provide the NRRB with concerns or reports from the general public?

**A.** Region 7 informed the NRRB that the Supplemental Feasibility Study was conducted to address continuing concerns expressed by the public about the ROD-selected remedy.

12. Did Region 7 provide NRRB with Dr. Bob Criss' report submitted to the EPA on March 15, 2013?

**A.** No. Region 7's consultation with the NRRB, and the NRRB's comments, occurred well before EPA received this document. The NRRB does not have an ongoing role in the management of the site; its function is to review a proposed remedy.

13. What information has the NRRB received as it relates to the subsurface smoldering event?

**A.** None. The NRRB does not have an ongoing role in the management of the site; its function is to review a proposed remedy.

14. Has the presence of the subsurface smoldering event triggered further recommendations from the NRRB as it relates to OU-1?

**A.** No. The NRRB does not have an ongoing role in the management of the site; its function is to review a proposed remedy. Future NRRB consultations will include this information as appropriate.

**Radium in Groundwater**

15. Can the EPA explain why levels of Radium-226 and Radium-228 are above the Maximum Contaminant Level (MCL) throughout the landfill, outside of Operable Unit 1? For example: The Responsiveness Summary from 2008 (page 3) states "only four wells exhibited a total radium concentration above the MCL of 5 picocuries per liter (pCi/L)" with the maximum reading being 6.33 pCi/L. A map in the Groundwater Monitoring report dated December 14th displays 20 wells that show radium levels above 5pCi/l with PZ-101-SS reading 32.01pCi/L, which is outside of Area-1 and Area-2 of Operable Unit 1.

**A.** EPA assesses the 2012 groundwater data as not proving or disproving the existence of a groundwater contaminant plume at the site. For this reason, EPA has requested that the PRPs conduct three additional rounds of groundwater sampling in 2013 which will enable USGS to provide a more comprehensive picture of current groundwater conditions at the site.

16. With the increase in the concentration of Radium found the wells, how can the EPA continue to state that the levels of Radium being read are naturally occurring, as the EPA stated at the January 17 public meeting at the Machinists Union Hall?

**A.** EPA is obtaining assistance from the USGS to interpret the groundwater results from the 2012 and upcoming 2013 sampling events and to determine the background contribution to contaminant concentrations in the aquifer beneath the site.

17. If there is "little to no Ra-228" in the landfill waste at West Lake Landfill OU-1, where is the Radium 228 in the groundwater coming from?

**A.** EPA is obtaining assistance from the USGS to understand and interpret the groundwater results from the 2012 and upcoming 2013 sampling events and determine the background contribution to contaminant concentrations in the aquifer beneath the site.

18. How can the EPA assert that "recent groundwater results indicate that contamination is not migrating substantial distances from its original location where the radioactive waste was disposed" when wells outside of OU-1 and OU-2 consistently read radium levels higher than the MCL and no reports of off-site testing have yet been posted?

**A.** It is EPA's position that the 2012 and 2013 groundwater data do not prove or disprove the existence of a groundwater contaminant plume at the site. For this reason, EPA has requested that the PRPs conduct three additional rounds of groundwater sampling in 2013 to provide a more comprehensive picture of current groundwater conditions at the site. EPA collected off-site groundwater samples at six private wells more than one mile northeast of West Lake in July 2013 to help assess background concentrations of contaminants in the alluvial aquifer. These wells were chosen because they are the closest to the site.

[NOTE: The Missouri Coalition letter received by EPA did not contain questions numbered 19 or 20.]

21. What testing protocol or investigation will be needed to ascertain the source of the radioactivity in the groundwater?

**A.** The four quarterly site-wide groundwater sampling events, along with USGS' interpretation of this data, are intended to do this. Existing data from the 2000 Remedial Investigation and other historical reports will be also be used as necessary.

22. In the groundwater reports from tests in August 2012 and April 2013, the EPA posted data for both combined total radium 226 and 228 and combined dissolved radium 226 and 228. It is our understanding that total radium comes from unfiltered samples while dissolved radium is gathered from filtered samples, thus the total radium should be higher than the dissolved radium for its respective sampling location. How does the EPA account for the last two groundwater reports reading higher dissolved radium than total radium in 30% of the wells?

**A.** Your understanding of this issue is correct. Both EPA and USGS have considered this issue and its potential causes, including variations in groundwater concentrations during the sampling process and the procedures for handling the samples once they have been collected. Sample handling procedures were changed slightly for the July 2013 sampling event to minimize any chance that sample handling may have contributed to total radium results exceeding dissolved radium results in some previous samples.

**Long Term Risks**

23. The EPA said in its response: "The EPA is overseeing work by the potentially responsible parties which includes the evaluation of risk associated with multiple disasters such as fire, tornado, and earthquake." Is the EPA or PRPs working on a new Risk Assessment for West Lake Landfill? If so, when will it be published? If not, does the EPA intend to provide a new Risk Assessment that includes landfill fire risks?

**A.** The evaluation of these risks will be presented in the Supplemental SFS report, along with the results of the six studies recommended by the NRRB. Region 7 requested that the PRPs perform this additional work, and they agreed to do so.

24. Is the EPA or PRPs taking into consideration the possibility of concurrent disasters taking place in its risk assessment?

**A.** The PRPs are evaluating multiple disaster scenarios in the Supplemental SFS.

[NOTE: The Missouri Coalition letter received by EPA did not contain questions numbered 25, 26 or 27.]

**Leached Barium Sulfate**

28. In the EPA response on Leached Barium Sulfate, too many assumptions are made and more clarity is needed. The EPA's justification that Cotter Corporation found the materials valuable and therefore "it is likely that very little of this material was left onsite" is an inadequate assumption about what was actually dumped at the West Lake Landfill as it relates to public health. Also, Atomic Energy Commission documents appear to contradict the basis of what was mixed with the 8,700 tons of Leached Barium Sulfate. It's MCE's understanding the material eventually shipped to Colorado sat outside, unprotected from the elements for years. Has the EPA considered the possibility that the soils from Latty Avenue contain highly soluble radioisotopes based on the exposure of the material at Latty to heavy rains over the course of several years?

**A.** It is likely that the soil removed from the Latty Avenue site and mixed with the barium sulfate residue contained residual amounts of the other radiological wastes stored there. However, it is impossible to say how much radiological material this soil contained or the processes by which the radiological material may have interacted with the soil. EPA has extensive analytical results for the materials actually present in West Lake Landfill, and these results are appropriate for use in remedy selection.

29. The EPA's understanding of what was dumped at the West Lake Landfill is inaccurate as recently as 2008 based on the Atomic Energy Commission's 1974 investigation of Latty Avenue, which has been shared with EPA Region 7. Does the EPA plan to continue basing its understanding of what was dumped at West Lake Landfill on what appear to be inaccurate NRC reports?

**A.** EPA is relying on the NRC's report for an accounting of this material. EPA would prefer that samples of the original residue had been analyzed. However, EPA was not the lead agency on the Site at that time. NRC has well-established expertise in assessing radiological sites, and despite speculation by the commenter to the contrary, no credible evidence refutes NRC's conclusion that leached barium sulfate residue was placed in the West Lake Landfill.

30. Has the EPA analyzed the West Lake Landfill as recommended by Dr. Criss in point 8 of his report submitted March 15, 2013? If so, where in the volumes of reports on West Lake Landfill can this information be found? EPA's guidance here is most appreciated.

"Additional study of the site is needed. The character of the radioactive materials and processing wastes originally dumped at West Lake Landfill needs to be determined. Relevant, old chemical and radiological analyses of these materials probably exist, and physical samples may still exist. In lieu of these being found, radioactively-contaminated material from the landfill needs to be excavated and collected, processed by standard mineral separation techniques, and then analyzed and examined to determine the chemical, physical and radiological character of the separates of concern. Accurate determination of elemental ratios including Ra/Ba, Ra/U, Ba/U, Th/U, Ba/SO4, etc. by ICP-MS and other modern techniques would clearly help. Groundwater analyses need to include major elements, physical parameters such as electrical conductivity, and stable isotope data so that radionuclides can be definitively traced to their sources by well-understood methods (e.g., Criss, 1999; Hasenmueller and Criss, 2013). It is not acceptable that so little is known about this radwaste after more than 30 years of "study". Regular monitoring of the levels and radionuclide contents of groundwater also need to be undertaken. Several dozen new monitoring sites must be developed to establish conditions at least 1000 feet away from the landfill boundaries, particularly north and northwest of Area 2, to establish the scale of groundwater contamination and migration."

**A.** EPA is relying on the NRC's report for an accounting of this material. EPA would prefer that samples of the original residue had been analyzed. However, EPA was not the lead agency on the Site at that time. NRC has well-established expertise in assessing radiological sites, and despite speculation by the commenter to the contrary, no credible evidence refutes NRC's conclusion that leached barium sulfate residue was placed in the West Lake Landfill. The commenter's suggestion here that samples of the radiologically contaminated material within the landfill should be dug up and analyzed now to obtain results indicative of the original barium sulfate waste is not sound scientifically. This material has been in contact with a diverse mixture of soils, municipal solid waste, and other wastes in uncontrolled conditions for the past forty years. The original radiological material has been unavoidably altered by this contact, and there is no way the material could be reliably "re-constituted" now.

31. Was inductively coupled plasma mass spectrometry (ICP-MS) used to analyze soil samples in OU-1?

**A.** No. Isotopes of radium, thorium and uranium cannot be measured by ICP-MS. They are measured using methods that analyze the radioactive emissions of these elements (primarily alpha spectrometry). Priority pollutant metals (including barium, copper, lead, mercury, etc) in soil were measured using EPA Method 6010, which uses inductively coupled plasma – atomic emission spectrometry (ICP-AES). Volatile and semi-volatile organic compounds cannot be measured by ICP-MS.

**Perimeter Fence**

32. Why was the fence along OU-1 Area 1 moved closer to the St. Charles Rock Road?

**A.** In March 2013, EPA requested that the PRPs install a fence on the southeast side of OU-1 Area 1, between this landfill cell and the adjacent North Quarry Landfill cell, to prevent workers responding to the subsurface oxidation event at the Bridgeton Sanitary Landfill from accidentally entering Area 1. The

PRPs agreed to do this, and they also decided to upgrade existing perimeter fences around both OU-1 areas at the same time.

33. When was the new fence constructed?

**A.** The fence installation began in late May 2013 and concluded in June.

34. By whose order?

**A.** The PRPs decided to upgrade existing perimeter fences around both OU-1 areas at the same time they were installing the fence EPA requested between OU-1 Area 1 and the adjacent North Quarry Landfill cell.

**Community Interviews**

35. Can EPA provide evidence on its website to support that community interviews were conducted between 1994 and 2013?

A. EPA has conducted formal and informal interviews throughout the history of the West Lake Landfill Superfund Site within the timeframe addressed. Interviews were conducted in concert with the initial Community Involvement Plan by an EPA contractor who was housed in St. Louis, Missouri in 1994. In 2006, EPA held two public meetings where comments were shared by community members. In 2008, another public meeting was held where comments were again shared. In the fall of 2011, the Community Involvement Plan was updated and phone interviews were conducted to gauge comments and concerns. In January 2013 and June 2013 public meetings were held where community members weighed in with comments and concerns. In March 2013 EPA's Environmental Justice program made contact with several individuals that attended EPA's January meeting to discern how individual neighborhood residents and businesses receive their information.

   EPA does not place community interviews and/or responses on its website for any Superfund site. EPA has maintained a consistent communication exchange with Bridgeton and surrounding cities at all community levels, including mayors, boards, individual residents, and health institutes over the past two decades. Also, in maintaining transparency, our Region 7 office has a toll-free phone number for community members to use to share concerns and recommendations.

36. How have the community interviews guided the EPA's response to community concerns? This question was not answered in the EPA's last response.

**A.** As a result of recent community interviews, it was determined that the community preferred face-to-face meetings to on-line "town hall" meetings. EPA plans to hold further face-to-face meetings with the community to respond to their concerns.

37. EPA Superfund decision making is supposed to be guided in part by what local communities want. How does EPA qualify and/or quantify community concerns or preferred remedial action when creating a Record of Decision, or in this case, an amended ROD?

**A.** EPA will evaluate the new groundwater data and the additional analyses the PRPs are doing. EPA will present this information to the National Remedy Review Board, and then will hold a public meeting

and comment period for the new proposed plan. EPA is required to respond to all public comments received during the public comment period.

**Public Record**

38. Will the EPA provide digital records on its website of all documents in the "administrative record" and "public record" concerning West Lake Landfill?

**A.** EPA recently assessed the condition of the Administrative Record stored in Bridgeton and determined that access to these documents needs to be improved. EPA is considering options for improving access and/or placing these documents on our webpage.

39. Does the EPA have different delineations for "administrative record" and "public record?"

A. No, the Administrative Record is the record to support EPA decisions and is made available to the public.

**Other Superfund Sites**

40. How many Superfund Sites in Region 7 involve radiological contamination?

A. There are five sites in the Superfund remedial program in Region 7 with radiological contamination: the St. Louis Airport Sites (SLAPS), West Lake Landfill, Weldon Springs, the Lake City Army Ammunition Plant (LCAAP) and the Iowa Army Ammunition Plant (IAAAP).

41. Has EPA Region 7 executed a ROD at a radioactive Superfund Site? If so, which ones and when?

**A.** ROD-selected remedial actions for radiological contamination have been implemented at Weldon Springs (1997-2001), Iowa Army Ammunition Plant (RA ongoing now), the St. Louis Airport Sites (RA ongoing now), and Lake City Army Ammunition Plant (2008-2009).

**Schedule**

42. Does the EPA have a schedule moving forward that it can provide regarding the decision making process?

**A.** After PRPs complete additional work which EPA had requested (one more groundwater monitoring event in 2013, preparation of six studies in 2014), steps remaining in the decision making process include:

- PRPs submit supplement to SFS to take into account results of additional work.
- EPA consults with NRRB about Proposed Plan.
- EPA issues Proposed Plan which identifies changes to 2008 ROD remedy.
- Public comments on plan and public meeting held.
- EPA issues amended ROD based on Proposed Plan and public comments.
- EPA resumes negotiations of Consent Decree with PRPs.

- DOJ lodges negotiated Consent Decree with Court, publishes notice and takes public comment.
- EPA/DOJ respond to public comment and DOJ files motion to enter.
- Assuming Court enters Consent Decree, implementation of the remedy begins.

## STEPS TO REMEDY IMPLEMENTATION IN ACCORDANCE WITH NCP

- PRPs submit supplement to SFS to take into account results of additional work.
- EPA consults with NRRB about Proposed Plan.
- EPA issues Proposed Plan which identifies changes to 2008 ROD remedy.
- Notice of public comments on Proposed Plan is issued and public meeting held.
- EPA considers public comments and issues amended ROD.
- EPA resumes negotiations of Consent Decree with PRPs.
- DOJ lodges negotiated Consent Decree with Court, publishes notice of public comment period.
- EPA/DOJ consider public comments and if settlement still deemed in the public interest, DOJ files motion to enter Consent Decree.
- Assuming Court enters Consent Decree, implementation of the remedy begins.

Wm. LACY CLAY
1st District, Missouri

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# Congress of the United States
## House of Representatives
## Washington, DC 20515-2501

2418 Rayburn House Office Building
Washington, DC 20515
(202) 225-2406
(202) 226-3717 Fax

6830 Gravois Ave.
St. Louis, MO 63116
(314) 669-9393
(314) 669-9898 Fax

Thomas F. Eagleton U.S. Court House
111 S. Tenth Street, Suite 24.344
St. Louis, MO 63102
(314) 367-1970
(314) 367-1341 Fax

August 2, 2013

Administrator Gina McCarthy
Environmental Protection Agency
1200 Pennsylvania Avenue, NW, Room 3426 ARN
Washington, DC 20460

Dear Administrator McCarthy,

I am writing this letter in regards to the West Lake Landfill located in my district. West Lake contains radioactive waste, and is currently under the jurisdiction of the Environmental Protection Agency (EPA).

In May 2008, after conducting environmental testing, the EPA issued its Record of Decision that stated the Formerly Utilized Sites Remedial Action (FUSRAP) program was not the appropriate federal program for remediating West Lake waste material. FUSRAP is under the jurisdiction of the Department of Energy (DOE) and the Army Corps of Engineers. The remediation plan adopted by EPA in its Record of Decision requires the agency to monitor the West Lake site to ensure that its remediation efforts are effective and that no air or groundwater contamination occurs.

Since May 2008, my constituents are and have been very concerned with EPA's remediation efforts at the West Lake site. Their concerns stem from many factors: 1) There is a lack of any type of lining between the radioactive waste and the soil which the waste sits on; 2) The waste is covered with a few inches of top soil lining that routinely blows away with wind; 3) The close proximity of the radioactive waste to another landfill called the Bridgeton Landfill, which has a subsurface fire that is not under control as of today's date; 4) The close proximity of West Lake to area schools, homes, and local businesses; and 5) The recent local air and groundwater testing conducted by the EPA, both of which show elevated levels of dangerous hazardous material.

I have continued to bring constituent inquiries about the West Lake landfill to the attention of EPA in an effort to ensure that the public safety is not jeopardized by EPA's remediation plan. I have attached the following documents from my constituents. The first document is a petition to EPA, asking the agency to review the May 2008 Record of Decision and transfer control of the West Lake remediation over to the Army Corps of Engineers' FUSRAP program for remediation, pending approval from DOE. The second document contains a series of letters to the EPA from the Missouri Coalition for the Environment and my constituents, which outline various questions and concerns regarding the remediation of West Lake.

I look forward to a response from your office addressing these pressing concerns regarding West Lake Landfill. Please feel free to contact my Chief of Staff, Darryl Piggee, at 202-225-2406, or by email at Darryl.Piggee@mail.house.gov if you have any questions. Thank you.

Sincerely,

Wm. Lacy Clay

Wm. Lacy Clay
Member of Congress

PRINTED ON RECYCLED PAPER

July 11, 2013

Senator Blunt, Senator McCaskill, Congressman Clay, and Congresswoman Wagner,

Communities around the West Lake Landfill Superfund Site in west St. Louis and St. Charles County need your help, leadership, and teamwork at this critical juncture. Over 600 people of people from the area attended the EPA meeting at Pattonville High School on June 25, 2013 and two things are clear, the community demands:

1. **The Army Corps of Engineers be put in charge on the West Lake Landfill Superfund Site.**
2. **The removal of nuclear weapons wastes from the smoldering, unlined landfill, which sits in an urban area, seismic zone, and tornado prone floodplain of the Missouri River.**

We urge you to work together to put West Lake Landfill on the fast track to becoming a Corps of Engineers Formerly Utilized Sites Remedial Action Program (FUSRAP) Site because the Corps has the local, technical expertise from its handling and removal of over 1,000,000 cubic yards of the same radioactive materials in St. Louis City and County.

We urge you to work together to secure our drinking water from the constant threat of contamination from the radioactive wastes that will be toxic for thousands of years. A floodplain is no home for such long-lived wastes.

Sincerely,

Attendees of the West Lake Landfill Community Meeting

**Sign on sheet for our Federally Elected Officials:**

- **Put FUSRAP in charge of West Lake Landfill.**
- **Remove the radioactive wastes, NOW.**

| Signature | First (Print) | Last (Print) | Address (print) | City | Zip | Phone # |
|---|---|---|---|---|---|---|
| | Jennifer | Smith | 1604 Silver Hill Ct | Wentzville | 63385 | 636 970 7101 |
| | Travis | Huber | 2524 Creve Coeur Mill Rd | Maryland Heights | 63043 | 314-344-9052 |
| | DONNA | Klocke | 2690 Timbercliff | Maryland Hts | 63043 | (314)-291-1631 |
| | Stacy | Chenoweth | 3318 Greenbridge | Bridgeton | 63044 | (314) 809-5946 |
| | BARB | KINNAIRD | 12743 Red Fox Ct | Maryland Hts | 63043 | 636 671 2438 |
| | Katie | Keeven | 3314 Bridgeton Trails Dr. | Bridgeton | 63044 | |
| | Jay | Black | 3022 Autumn Lks Ct | Maryland Hts | 63043 | 314-269-7109 |
| | Rio | Schandelmeier | 30 Winding Star Way | O'Fallon | 63368 | 636-614-5014 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

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| Signature | First (Print) | Last (Print) | Address (print) | City | Zip | Phone # |
|---|---|---|---|---|---|---|
| Irma Kennebeck | IRMA | KENNEBECK | 3221 McKENEY RD | BRIDGETON | 63044 | 314-768-1826 |
| Loretto Gettemeier | Loretto | Gettemeier | 3223 Parkwood Lane | Maryland Heights | 63043 | 314-739-7450 |
| Josh Wilson | Josh | Wilson | 11846 Admiralton Dr | Bridgeton | 63044 | 314-739-7124 |
| Ferdinand & Fetsch | FERDINAND E | FETSCH | 3336 TUSCANY Ave | BRIDGETON | 63044 | 314-291-3021 |
| Diane Shockley | Diane | Shockley | 11840 Melody LN | Bridgeton | 63044 | 314-739-5872 |
| Sandra Buzzetta | SANDRA | BUZZETTA | 192 HUNTERS POINTE | ST. CHARLES | 63304 | 314-498-0633 |
| Katie Lamb | Katie | Lamb | 12022 Autumn Lks Dr | Maryland Hts | 63043 | 314-223-1230 |
| Danielle Fritz | Danielle | Fritz | 6445 Loyola Drive | Florissant | 63031 | 3149727236 |
| Melissa McConnell | Melissa | McConnell | 12136 Nantucket Pl | Maryland Hts | 63043 | 314-757-1977 |
| Melvin Vatterott | Melissa | Vatterott | 310 Geyer Forest Drive | St. Louis | 63122 | 314-581-0561 |
| | | | | | | |

**Sign on sheet for our Federally Elected Officials:**

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| Signature | First (Print) | Last (Print) | Address (print) | City | Zip | Phone # |
|---|---|---|---|---|---|---|
| A Betty | Betty | Brucker | 3393 McKelvey 63044 | Bridgeton | 63044 | 609-4244 |
| D Staab | David | Staab | 2672 McKelvey | Md Hgts | 63043 | |
| Paul Fein | Paul | Fein | 2666 Autumn Lakes Dr. | Maryland Hgts | 63043 | 314-363-5197 |
| Jennifer Huber | Jennifer | Huber | 2524 Crwn Coeur Mill #9 | Maryland Hts | 63043 | 314-344-9052 |
| Susan Folle | Susan | Folle | 1604 Silver Hills ct | Wentzville Mo | 63385 | 636-887-0883 |
| Sonya Ptah | Sonya | Ptah | ~~1257~~ 12138 Autumn Lake | Maryland Heights | 63043 | 317 540 0467 |
| Lori Gilbert | Lori | Gilbert | 3077 Dovecrave | Maryland Hts | 63043 | 314 277-4567 |
| John Fischer | John | Fischer | 3183 Autumn Tie Dr | Maryland Hgts | 63043 | 314 209 0227 |
| Kris A. Paglusch | Kris | Paglusch | 4006 High Meadow Dr. | Robertsville | 63072 | 636-271-7859 |
| Bob Nowlin | Bob | Nowlin | 3386 Tarboa Dr | Bridgeton | 63044 | 314-291-4657 |
| Byron+Vera Saunders | Byron | Saunders Sr. | 11204 Oak Hill Manor Dr. | Bridgeton | 63044 | 314-780-1486 |

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| Signature | First (Print) | Last (Print) | Address (print) | City | Zip | Phone # |
|---|---|---|---|---|---|---|
| SR FRANCES HAARMANN | FRANCES | HAARMANN | 7318 Ethel | ST. LOUIS | 63117 | 314-781-2421 |
| Marita Jane Marrah | Marita | Marrah | 7311 Hoover | Richmond Heights | 63117 | 3146454759 |
| Barbara E Ray | Barbara | Ray | 12835 Tall Tree Ct | Hazelwood | 63042 | 314-402-4810 |
| Bonnie Kinnaird | Bonnie | Kinnaird | 12743 Red Fox Ct | Maryland Hts | 63043 | 573-301-0460 |
| Carl Chappell | 1430 | ARLINGTON DR | | FLOR | 63033 | |
| Rhonda Steelman | Rhonda | Steelman | 3412 Ludlow Ave | BRIDGETON | 63044 | 314 800 7455 |
| Lynn Leake | LYNN | Leake | 3512 EL FERROL | Bridgeton | 63044 | 3146006558 |
| | Jeanne | Hendrickson | 2731 Warren Ave | Granite City | 62040 | 3148286141 |
| Chuck Bell | Chuck | Bell | 12736 San Clemente | Bridgeton | 63044 | 314-298-0223 |
| Maria Moehle | Maria | Moehle | 2458 Wesbay Drive | Maryland Hts | 63043 | 314 220-8942 |
| | Fe | Richards | | | | |

**Sign on sheet for our Federally Elected Officials:**

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- **Remove the radioactive wastes, NOW.**

| Signature | First (Print) | Last (Print) | Address (print) | City | Zip | Phone # |
|---|---|---|---|---|---|---|
| Susan Siegler | Susan | Siegler | 950 Chula Dr. | Hazelwood | Mo3042 | 314-971-4595 |
| [illegible] | Douglas | Clemens | 10825 Spring Ave | Bridgeton | 63074 | 314.285.3498 |
| [illegible] | Christine | Benner | 3393 Mc Kelway | Bridgeton | 63044 | 314-202-5442 |
| Mary J Schieber | Mary | Schieber | 9559 Grandview DR | St Louis | 63132 | 314872-1777 |
| Becky VanThull | Becky | VanThull | 5400 Rainbow Dr | Housesprings | 63051 | 636-775-5063 |
| Debi Dosser | Debi | Dosser | 9084 Patrick Dr | St. John | 63114 | 314629-0705 |
| Jean A. Lange | Jean | Lange | 2590 Cheshire Dr | Florissant | 63033 | 314-910-1493 |
| Marilyn Greenwald | MARILYN | GREENWALD | 2332 Charlemagne | Mid. Hgts | 63043 | 314-555-12[illegible] |
| [illegible] | | | | | | |
| [illegible] | Vicki | Loux | 11972 Kentwood | Md Hts | 63043 | 314-209952 |
| [illegible] | Pat | Gamp | 11920 Sarthe Dr | Maryland Hts | 63043 | 314-374-8810 |

**Sign on sheet for our Federally Elected Officials:**

- **Put FUSRAP in charge of West Lake Landfill.**
- **Remove the radioactive wastes, NOW.**

| Signature | First (Print) | Last (Print) | Address (print) | City | Zip | Phone # |
|---|---|---|---|---|---|---|
| Debbie Neuman | Debbie | Neuman | 12730 San Clemente Drive | Bridgeton | 63044 | 314 313-9033 |
| Jeanne Deuer | JEANNE | DEURER | 8840 GLENWOOD DR. | CRESTWOOD | 63126 | 314. 849.2404 |
| Jeanne Meurer | JEANNE | Meurer | 3393 McCleary | Bridgeton | 63044 | 314- 446-3444 |
| Karen Heath MD | Karen | Heath, MD | #1010 710 S Grand | St. Louis | 63118 | 314- 956-1151 |
| Carla Miller | Carla | Miller | 3034 Autumn Lake Ct | maryland HTS | 63043 | 636- 536-2094 |
| Kathy Bell | Kathy | Bell | 12736 San Clemente | Bridgeton | 63044 | 314-298-0223 |
| Shannon Kluczny | Shannon | Kluczny | 2325 Pheasant Run | Maryland HTS | 63043 | 3143634604 |
| Linda J. Eaker | LINDA | EAKER | 3255 Autumn View Pointe Dr. | BRIDGETON | 63044 | 314-291-3880 |
| Bruce Neuman | Bruce | Neuman | 12730 San Clemente Dr | Bridgeton | 63044 | 314 313-9033 |
| Jerell Wright | Jerell | Wright | 3 Yorkshire Ct, Edwardsville, IL | | 62025 | 618 304-8532 |
| [illegible] | MARTIN | WALLER | 9680 LINCOLN DR | WORDEN | 62097 | 618-288-5883 |

**Sign on sheet for our Federally Elected Officials:**

- **Put FUSRAP in charge of West Lake Landfill.**
- **Remove the radioactive wastes, NOW.**

| Signature | First (Print) | Last (Print) | Address (print) | City | Zip | Phone # |
|---|---|---|---|---|---|---|
| Alexandra Duly | Alexandra | Duly | 302 Dora Pl. | O'Fallon | 63366 | 636-544-1470 |
| Karen Nickel | Karen | Nickel | 12141 Hillcrest Pl | Maryland Hts | 63043 | 3142294896 |
| Martha Hall | Martha | Hall | 11916 Glenpark | Maryland Hts | 63043 | 314-298-0163 |
| Sandra Darr | Sandra | Darr | 546 Sugar Valley Ct | St Peters | 63376 | |
| | Jerry | Grimmer | 12016 Avery Ln. | Bridgeton | 63044 | 314 739-7491 |
| Regina Richards | Regina | Richards | 12057 Glengrove Pl | Maryland Hgts | 63043 | 314.368.3407 |
| Traci Vette | Traci | Vette | 3069 Chainbuck Ln. | " | 63043 | |
| BrieAnn McCormick | BrieAnn | McCormick | 3420 San Seville Ct | Bridgeton | 63044 | |
| Randal Hein | RANDAL | HEIN | 4137 SCOTCH DR | Bridgeton | 63044 | |
| Sandy Schwartz | SANDY | SCHWARTZ | 3321 McKelvey Rd | Bridgeton | 63044 | 314-768-1828 |
| Kathy Vogelsang | Kathy | Vogelsang | 10521 Lith | St Ann | 63074 | 3147280711 |

Missouri Coalition for the Environment
Effective Citizen Action Since1969

May 23, 2013

Karl Brooks
Regional Administrator, Region 7
Environmental Protection Agency
11201 Renner Blvd.
Lenexa, KS 66219

RE: West Lake/Bridgeton Landfill Superfund Site

Dear Mr. Brooks:

A subsurface landfill fire is burning in the proximity of nuclear weapons wastes in Bridgeton, Missouri. The odor from the landfill fire has impacted tens of thousands of people and concern about it contacting the nuclear weapons wastes is growing. The EPA announced in January the landfill fire was 1,200 feet from the nuclear weapons wastes. In May, the Missouri Attorney General announced the landfill fire is 1,000 feet away from the nuclear weapons wastes. EPA employees have stated several times this year that it is not possible for the landfill fire to reach the nuclear weapons wastes.

The Missouri Coalition for the Environment and the undersigned members of the adjacent communities would love to be as confident as your staff that the fire will not reach the nuclear weapons wastes. Please help us understand your position so that we may know our communities are safe. Please answer our questions:

1. Can the EPA say with 100% confidence that the landfill fire will not reach the nuclear weapons wastes? If yes, will the EPA explain to the community, in detail, the information it is using to make this determination. If no, what is the EPA plan to ensure the fire does not reach the nuclear weapons wastes?
2. How does EPA explain that the temperatures in the landfill past the interceptor wells are rising above levels of concern- 170 degrees at several of the monitoring wells including at TMP5, TMP13 and TMP14?
3. The EPA Remedial Investigation for the West Lake Landfill OU-1 (pg. 80) indicates that the normal groundwater flow is toward the Missouri River. However, its normal flow was being influenced by the leachate collection system in the adjacent landfill. It's our understanding that the leachate collection pumps have stopped working at the Bridgeton landfill. How will this affect groundwater flow in the West Lake Landfill OU-1 Area 1 and 2?

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4. Is the EPA sampling groundwater between West Lake OU-1 and the Missouri River or anywhere offsite?
5. Will EPA provide the data on groundwater sampling locations, results, and plans?
6. How often is EPA sampling groundwater monitoring wells? What days did the EPA sample groundwater at the site in 2012 and 2013? What is the schedule for groundwater sampling in 2013?
7. Groundwater plumes are often seen at superfund sites where soil has been contaminated with chemicals. Soil is not the same as landfill waste. Would EPA expect to find a groundwater plume in a heterogeneous mixture of materials such as can be found in the West Lake landfill?
8. How would groundwater behave in landfill material that might be different from how groundwater would behave in a homogeneous material like soil?
9. What information would EPA need in order to predict groundwater movement in landfill material with some degree of accuracy? Does the agency have this information?
10. Has the EPA conducted community interviews of "impacted communities" in the last 10 years? If yes, does EPA have evidence to support that community interviews were conducted? If yes, how have community interviews guided EPA response to community concerns? If no, what is the EPA plan for conducting community interviews and when will people be notified?
11. In March, EPA told the public that it flew the Aspect plane over the area to measure airborne radiological hazards. Where is the data from the Aspect plane?
12. Will EPA provide the raw data to the public?
13. What are the abilities and limitations of the ASPECT plane monitors?
14. Did the ASPECT plane conduct a thermal analysis of the landfill?
15. Who requested the ASPECT plane flyover?
16. Why was the ASPECT plane flown over?
17. Where did it take measurements?
18. Does the EPA have any air data on radon/radon daughters from north St. Louis?

Thank you for your consideration of our concerns.

Yours truly,

Kathleen Logan Smith, MCE

Ed Smith, MCE

Dawn Chapman, Maryland Heights

Jay Black, Maryland Heights

Bob Nowlin, Bridgeton

Kay Drey
Kay Drey, Beyond Nuclear

MARYLAND HEIGHTS

| | | |
|---|---|---|
| 1. | Beth Strohmeyer<br>BETH STROHMEYER | |
| 2. | Douglas Clemens | St. Ann |
| 3. | Julie Pitzen<br>Julie Pitzen | Hawk Point |
| 4. | Stacy L. Chenoweth<br>Stacy L. Chenoweth | Bridgeton |
| 5 | BD Chenoweth II<br>BRADLEY D. CHENOWETH II | BRIDGETON |
| 6 | Sharon L. Duisen<br>SHARON L. DUISEN | Bridgeton |
| 7 | Robert Duisen<br>Robert Duisen | Bridgeton |
| 8. | Megan Richardson<br>Megan Richardson | St. Peters |
| 9. | Cheryl Lokke<br>Cheryl C. Lokke | St John. MO |
| 10 | F. Scott Kenny<br>F. Scott Kenny | ST CHARLES, MO |
| 11 | Sharon Kenny | St. Louis MO 63114 |
| 12 | Clare Duffy | Maryland Hts. |
| 13 | Sara Schmiedeskamp | St Louis, MO 6311C |
| 14. | Frances M. Hausmann | St. Louis. MO. 63117 |
| 15 | Jeanne Meier | Bridgeton MO 63044 |

| | | |
|---|---|---|
| 16. | Mary Chaudet Mary Chaudet | FERGUSON 63136 |
| 17. | Jeanne Derer JEANNE DERER | CRESTWOOD 63126 |
| 18. | Allison Stiven | St. Louis 63114 |
| 19. | Paula Frey | |
| 20. | Dil. Skilla | Maryland Hts 63043 |
| 21 | Kathryn C Halland | Bridgeton, MO 63044 |
| 22 | John Ahern | Bridgeton MO 63044 |
| 23 | MIKE DUNNIGAN | BRIDGETON, MO. 63044 |
| 24 | Gale Thackrey | Bridgeton, MO 63044 |
| 25 | Ric Schandelmeyer | O'Fallon MO 633368 |
| 26 | Elliott Rhodes | Chesterfield, MO 63017 |
| 27 | Nancy Hargis | St Charles, MO 63304 |
| 28 | Kathy Bell | Bridgeton, MO 63044 |
| 29 | Chuck Bell | Spanish Village Bridgeton Mo |
| 30 | Debbie Neuman | Spanish Village, Bridgeton |
| 31 | Bruce Neuman | Spanish Village, Bridgeton |
| 32 | William J. Wilson, Jr. | Spanish Village, Bridgeton |
| 33 | Dori Gilbert | Maryland Heights 63043 |
| 34 | Lynn A. Lehr | Bridgeton mo (spanish village |
| 35 | Donna Klocke | Maryland Hgts MO 63043 |
| 36 | Vicki Loyd | Maryland Hts, MO 63043 |
| 37 | PAT GAMP Patricia Gamp | MARYLAND HTS MO 63043 |
| 38 | Debi Disser | St. John, MO 63114 |
| 39. | Jenna Hodges | Florissant MO 63031 |
| 40. | Jlo Janitch | Maryland Hts., MO 63043 |
| 41. | ANDREA CROUCH | MARYLAND Hgts., MO 63043 |
| 42. | Bob Moeller | Bridgeton - Spanish Lake |

16. Dorian Boscan — Bridgeton MO 63044

17. Elliott Rhod — Chesterfield, MO 63017

18 Mary Lou Burke — Maryland Hgts 63043

19 ~~D~~ David Kershaw — Maryland Hgts 63043

Missouri Coalition
for the Environment
Effective Citizen Action Since1969

**Questions for EPA** **June 18, 2013**

Karl Brooks
Regional Administrator, Region 7
Environmental Protection Agency
11201 Renner Blvd.
Lenexa, KS 66219

RE: West Lake/Bridgeton Landfill Superfund Site

Dear Mr. Brooks:

The Missouri Coalition for the Environment (MCE) requests a meeting to go over questions submitted to the EPA dated May 23, 2013 and the questions below regarding the West Lake Landfill Superfund Site in St. Louis County, Missouri. MCE would like to meet with EPA staff before the June 25, 2013 public meeting scheduled at Pattonville High School so we can have an in-depth conversation regarding MCE and community concerns at West Lake Landfill. Will EPA meet with MCE before the June 25 meeting? If a meeting cannot be scheduled for June 25, will EPA please provide a written response to unanswered questions from the May 23 letter and questions listed below?

1. The EPA's 2008 Record of Decision on West Lake Landfill makes numerous assumptions about the inability of the radioactive wastes to move offsite based on current site conditions. The data also shows that the radioactive wastes will become more radioactive for the next 9,000 years. West Lake Landfill sits in a floodplain, in an urban area, and in a seismic zone; recently, several tornadoes have come close to touching down at the landfill; and there is a "subsurface smoldering event" in the landfill in close proximity. What guidance/statute/regulation does EPA use when determining long-term risk at Superfund Sites that will remain contaminated virtually forever?
    a. The Japanese and United States governments never considered multiple events compromising nuclear reactors, like the earthquake and tsunami that hit Fukushima in Japan, crippled three reactors, and damaged safety systems. Has the EPA developed a risk assessment that considers multiple disasters impacting the spread of radioactive wastes at the West Lake Landfill?
2. Does the EPA contend that 8,700 tons of leached barium sulfate from Latty Avenue was mixed with 38,000 tons to 39,000 tons of "clean material" as stated in the Responsiveness Summary (page 13)?
3. How does the EPA explain levels of Radium-226 and Radium-228 outside of Operable Unit - 1? For example: The Responsiveness Summary from 2008 (page 3) states "only four wells exhibited a total radium concentration above the MCL of 5 picocuries per liter (pCi/l)" with the maximum reading

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being 6.33PiC/l. A map in the Groundwater Monitoring report dated December 14th, 2012 (page 84) displays 20 wells that show radium levels above 5pCi/l with PZ-101-SS reading 32.01pCi/l, which is outside of Area-1 and Area-2 of Operable Unit 1. With the increase in the concentration of Radium from the wells, how can the EPA continue to state that the levels of Radium being read are naturally occurring?

   a. Does naturally occurring Radium increase its radioactivity over time?
   b. Can the EPA explain the increase in the level of radium in the wells above 5 PiC/l?

4. Given that the radioactive wastes were dumped at West Lake 40 years ago and Dr. Criss's conclusion that the "radiologically-contaminated groundwaters have moved substantial lateral distances away from the original areas where the radwaste was dumped, and also have entered subjacent Mississippian bedrock," is it more likely that the levels of Radium-226 and Radium-228 are elevated because they are from the radioactive wastes that were dumped and therefore are not naturally occurring as the EPA currently concludes?
5. Besides the ASPECT plane and groundwater testing, is the EPA doing anything else (i.e. soil samples) to improve its understanding of the West Lake Landfill and the radioactive materials that are present?
6. Is the EPA conducting groundwater samples outside the West Lake Landfill? If no, why not? If no, how can the EPA claim the radioactive wastes have not moved off site? If yes, can the EPA provide the data?
7. How can the EPA conclude that the radioactive materials are contained based on the ASPECT plane, which only measured gamma radiation up to one foot, while the radioactive wastes are buried up to 15 feet deep and there is no liner to prevent groundwater contamination?
8. Is there a "red line" to trigger the removal of the radioactive wastes in context to the smoldering landfill event and its apparent progression north towards Area 1?
9. Has the EPA conducted community interviews of "impacted communities" in the last 10 years? If yes, does the EPA have evidence to support that community interviews were conducted? If yes, how have community interviews guided the EPA's response to community concerns? If no, does the EPA plan on conducting community interviews prior to the next Record of Decision?

Thank you for your consideration.

Ed Smith, MCE

Kathleen Logan Smith, MCE

6267 Delmar Boulevard · Suite2E · St.Louis, Missouri 63130 4722 · (314) 727-0600 · Fax: (314) 727-1665 · moenviron@moenviron.org · www.moenviron.org

July 25, 2013

Karl Brooks
Regional Administrator, Region 7
Environmental Protection Agency
11201 Renner Blvd.
Lenexa, KS 66219

RE: West Lake Landfill Superfund Site

Dear Mr. Brooks:

The West Lake Landfill impacted communities request answers to the below questions. During a June 26, 2013 meeting with Administrator Brooks, the Missouri Coalition for the Environment agreed to work with community members to only send questions regarding the landfill once a month. The Environmental Protection Agency has yet to respond to questions submitted in May and June of 2013. The West Lake Landfill impacted communities continue to be concerned about the safety of citizens living in proximity to the landfill and depend on the EPA to address our concerns as the lead regulatory agency. The undersigned community members expect the EPA to provide a written response within 4 weeks of receiving this letter.

1. How close can the subsurface smoldering event approach West Lake Landfill before the EPA interjects and emergency actions are taken? Meaning, does the EPA have a "red line" for its involvement?

2. Has the EPA received any information regarding groundwater flow at the West Lake Landfill from the USGS? Is there a timeframe for USGS involvement?

4. Where exactly will the off-site groundwater samples be collected surrounding the West Lake Landfill Superfund Site? Will a sampling plan be made available for comment before sampling is conducted?

5. Will EPA provide groundwater sampling (both on-site and off-site) locations, results, and plans with the community?

6. How does the EPA explain levels of Radium-226 and Radium-228 outside of Operable Unit 1? For example: The Responsiveness Summary from 2008 (page 3) states "only four wells exhibited a total radium concentration above the MCL of 5 picocuries per liter (pCi/I)" with the maximum reading being 6.33PiC/l. A map in the Groundwater Monitoring report dated December 14th displays 20 wells that show radium levels above 5pCi/l with PZ-101-SS reading 32.01pCi/l, which is outside of Area-1 and Area-2 of Operable Unit 1.

a) With the increase in the concentration of Radium from the wells, how can the EPA continue to state that the levels of Radium being read are naturally occurring?

b) Can the EPA explain the significant increase in wells that showed Radium above 5 PiC/l?

7. Does the EPA contend that 8,700 tons of leached barium sulfate from Latty Avenue was mixed with 38,000 tons to 39,000 tons of "clean material" as stated in the Responsiveness Summary (page 13)?

8. What studies/investigation did the National Remedy and Review Board recommend EPA Region 7 conduct to better understand the West Lake Landfill?

9. Why was the fence along OU-1 Area 1 moved closer to the St. Charles Rock Road? What day(s) was the new fence constructed? By whose order?

10. Will the EPA provide digital records on its website of all documents in the "administrative record" and "public record" concerning West Lake Landfill?

11. How many Superfund Sites in Region 7 involve radiological contamination? Has EPA Region 7 executed a ROD at a radioactive Superfund Site? If so, which ones and when?

12. How can the EPA conclude that the radioactive materials are contained based on the ASPECT plane, which only measured gamma radiation up to one foot, while the radioactive wastes are buried up to 15 feet deep and there is no liner to prevent groundwater contamination?

13. Has the EPA conducted community interviews of "impacted communities" in the last ten years? If yes, does the EPA have evidence to support that community interviews were conducted? If yes, how have community interviews guided the EPA's response to community concerns? If no, does the EPA plan on conducting community interviews prior to the next Record of Decision?

Thank you for your consideration.

Sincerely,

West Lake Landfill Impacted Communities & MCE

The West Lake Landfill impacted communities continue to be concerned about the safety of citizens living in proximity to the landfill and depend on the Environmental Protection Agency (EPA) to address our concerns as the lead regulatory agency. The undersigned community members expect the EPA to provide a written response to the attached questions within 4 weeks of receiving this letter.

| Signature | First (Print) | Last (Print) | Phone | Address | City | ZIP |
|---|---|---|---|---|---|---|
| Mary Catherine Dunn | MARY | DUNN | 314-739-7450 | 3223 PARKWOOD LN | MARYLAND HGTS | 63043 |
| Sandra L Buzzetta | Sandy | BUZZETTA | 3144980633 | 192 Hunters Pointe | ST. Charles | 63304 |
| Irma Kennebeck | IRMA | KENNEBECK | 314-768-1826 | 3221 McKELVEY RD | BRIDGETON | 63044 |
| Debi Disser | Debi | Disser | 314 629-0705 | 9084 Patrick Dr | St. John | 63114 |
| Jeanne Deere | JEANNE | DEERE | 314. 849. 2404 | 8840 GLENWOOD DR. | ST. LOUIS | 63126 |
| Dawn Demeke | DAWN | DEMEKE | 314 738-0957 | 308 Little Ave | M. Heights | 63043 |
| Linda Leib | Linda | Leib | 34 291-7956 | 11691 Donnycove Ln | Maryland Hts | 63043 |
| M Richards | Fe | Richards | | 12066 Autumn Lakes Dr | Mayland Hts | 63043 |
| Saml Fein | Saml | Fein | | " | " | " |
| John Fischer | JOHN | Fischer | 209-0227 | 383 Autumn Trace Dr | Maryland Hts | 63043 |
| Brad Chenoweth | BRAD | CHENOWETH II | 314 482-6237 | 331B GREENBRIDGE | BRIDGETON | 63044 |

The West Lake Landfill impacted communities continue to be concerned about the safety of citizens living in proximity to the landfill and depend on the Environmental Protection Agency (EPA) to address our concerns as the lead regulatory agency. The undersigned community members expect the EPA to provide a written response to the attached questions within 4 weeks of receiving this letter.

| Signature | First (Print) | Last (Print) | Phone | Address | City | ZIP |
|---|---|---|---|---|---|---|
| Michael Williams | MICHAEL | WILLIAMS | 314 813-4533 | 1308 COLUMBUS DR ST LOUIS MO 63138 | ST LOUIS | 63138 |
| M Chris Williams | Mary Christine | Williams | 314-667-6332 | 1308 Columbus Dr St Louis Mo | St. Louis | 63138 |
| Susan Siegler | Susan | Siegler | 314.971-4595 | 950 Chula Drive | Hazelwood | 63042 |
| Margaret Krahman | Margaret | KRAHMAN | 314-434-1500 | 12087 Fleetwood | Maryland Hts | 63043 |
| Elaine Stern | Elaine | Stern | 3149653047 | 1312 DOMINICA | STL | 63138 |
| Kathy Bell | Kathy | Bell | 314-298-0223 | 12736 San Clemente | Bridgeton | 63044 |
| Chuck Bell | Chuck | Bell | " | " | " | " |
| Katherine Randolph | Katherine | Randolph | 314-291-7364 | 3372 San Sevilla Ct | Bridgeton | 63044 |
| Sandy Schwartz | SANDY | SCHWARTZ | 314-768-1828 | 3221 McKelvey Rd | BRIDGETON | 63044 |
| Mary Ann Ford | Mary Ann | Ford | 314-302-7593 | 800 Keenland Rd | Florissant | 63034 |
| Rhonda Steelman | Rhonda | Steelman | 314 800 7455 | 3412 Ludlow Ave | Bridgeton | 63044 |

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|---|---|---|---|---|---|---|
| Mary McCarthy | MARY | McCARTHY | 3146095523 | 2419 Wexford | Maryland Hts | 63043 |
| John S Janitch | JIO | Janitch | 314-739-6476 | 12004 Autumn Lake Dr. | Maryland Hts, | 63042 |
| Cindy Finnegan | Cindy | Finnegan | 314 566 9630 | 1836 Tawny Ash Dr | St L | 63146 |
| Stacy R Chenaweth | Stacy | Chenaweth | (314) 809-5946 | 3318 Greenbridge Dr | Bridgeton | 63044 |
| Todd Nickel | Todd | Nickel | 314 685-6297 | 12141 Hillcrest | maryland Hights | 63043 |
| Megan Richardson | Megan | Richardson | 314-608-3036 | 1 Yankee Jim Ct | St. Peters | 63376 |
| Katie Keeven | Katie | Keeven | 314-223-7559 | 3319 Bridgeton Trails Dr. | Bridgeton | 63044 |
| Rhonda Steelman | Rhonda | Steelman | 314-800-7455 | 3412 Ludlow Ave | Bridgeton | 63044 |
| Randy Hein | RANDY | HEIN | 314-398-1709 | 4137 SCOTCH | | 63044 |
| | | | | | | |
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|---|---|---|---|---|---|---|
| Stacy L Chenoweth | Stacy | Chenoweth | (314) 809-5946 | 3318 Greenbridge Dr. | Bridgeton | 63044 |
| Todd Nicks | Todd | Nicks | (314) 6856297 | 12141 Hillcrest Pl | Maryland Hghts | 63043 |
| Bob Nowlin | Bob | Nowlin | 314-291-4689 | 3384 Tortosa Dr | Bridgeton | 63044 |
| Barbara J. Bullard | | | 314 291 - 5047 | 11561 Breezeway | Bridgeton | 63044 |
| Martha Hall | Martha | Hall | 314-298-0103 | 11916 Glenpark | Maryland Hts | 63043 |
| Frank Licata | FRANK | LICATA | 314-735-2841 | 3526 EL FERROL CT | BRIDGETON | 63044 |
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| Signature | First (Print) | Last (Print) | Phone | Address | City | ZIP |
|---|---|---|---|---|---|---|
| Susan Folle | Susan | Folle | 636-887-0883 | 1604 Silver Hills Ct | Wentzville | 63385 |
| Jennifer Smith | Jennifer | Smith | 636 6963701 | 11 | 11 | 11 |
| Gwendolyn Verhoff | Gwendolyn | Verhoff | 314 435-6343 | 10450 Decker | Overland | 63114 |
| Marilyn Caldwell | Marilyn | Caldwell | 314 838 9518 | 809 Keeneland Rd | Florissant | 63034 |
| Mary McCarthy | MARY | McCARTHY | 3146095563 | 2419 Wexford | Maryland Hts | 63043 |
| Clare Duffy | Clare | Duffy | 314 291-3144 | 3110 Autumn Trace Dr. | Maryland Hts | 63043 |
| Vernita Wilson | Vernita | Wilson | 314.739.8405 | 3538 El Ferrol Ct. | Bridgeton | 63044 |
| Megan Richardson | Megan | Richardson | 314-608-3036 | 1 Yankee Jim Ct | St. Peters | 63376 |
| ~~Pat Marsell~~ | ~~Pat~~ | | | | | |
| Pat Marsell | Pat | Marsell | 314-739-2119 | 3521 El Ferrol Ct R | Bridgeton | 63044 |
| Robert Duiser Sharon Duiser | Bob Sharon | Duiser | 314-739-0598 | 3880 Triplett Pl Ct Bridgeton, Mo. 63044 | Bridgeton | 63044 |

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| Signature | First (Print) | Last (Print) | Phone | Address | City | ZIP |
|---|---|---|---|---|---|---|
| Jennifer L Huber | Jennifer | Huber | 314-344-9052 | 2524 Creve Coeur Mill Rd #9 | Maryland Heights | 63043 |
| Ferdinand E Fetsch | FERDINAND | FETSCH | 314-291-3021 | 3336 TUSCANY HILLS CT | BRIDGETON | 63044 |
| Jo L Janitch | JLO | Janitch | 314-739-6470 | 12004 Autumn Lakes Dr. | Maryland Hts. | 63043 |
| Cynthia Finnegan | Cynthia | Finnegan | 3145669630 | 1836 Tawny Ash Dr | STL MO | 63146 |
| Bill Wilson | BILL | WILSON | 314-739-8405 | 3538 EL FERROL CT. | BRIDGETON | 63044 |
| Sr Ellen Orf CSJ | SR Ellen | Orf | 636 293 8253 | 204 N. MAIN ST | O'FALLON | 63366 |
| Randy Hein | RANDY | HEIN | 314-298-1701 | 4137 SCOTCH | BRIDGETON | 63044 |
| Katie Keevan | Katie | Keevan | 314-223-3559 | 3314 Bridgeton Trails Dr | Bridgeton | 63044 |
| Jodi Willard | Jodi | Willard | 314-706-4844 | 11846 Administration | Bridgeton | 63044 |
| | | | | | | |
| | | | | | | |

## STEPS TO REMEDY IMPLEMENTATION IN ACCORDANCE WITH NCP

- PRPs submit supplement to SFS to take into account results of additional work.
- EPA consults with NRRB about Proposed Plan.
- EPA issues Proposed Plan which identifies changes to 2008 ROD remedy.
- Notice of public comments on Proposed Plan is issued and public meeting held.
- EPA considers public comments and issues amended ROD.
- EPA resumes negotiations of Consent Decree with PRPs.
- DOJ lodges negotiated Consent Decree with Court, publishes notice of public comment period.
- EPA/DOJ consider public comments and if settlement still deemed in the public interest, DOJ files motion to enter Consent Decree.
- Assuming Court enters Consent Decree, implementation of the remedy begins.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
11201 RENNER BOULEVARD
LENEXA, KS 66219

AUG 23 2013

OFFICE OF
THE REGIONAL ADMINISTRATOR

The Honorable Claire McCaskill
United States Senator
Washington, D.C. 20510

Dear Senator McCaskill,

Thank you for your letter of July 29, 2013, to the U.S. Environmental Protection Agency about the West Lake Landfill in Bridgeton. The EPA appreciates your interest in the Bridgeton and West Lake landfills. The EPA continues to work closely with the Missouri Department of Natural Resources and the Missouri Attorney General's Office. The Agency for Toxic Substances and Disease Registry and part of the U.S. Department of Health and Human Services, is advising the EPA about human health issues related to the landfills and works closely with the Missouri Department of Health and Senior Services. The EPA also maintains active communication with ATSDR and MDHSS.

The landfills' responsible parties will collect the last quarterly round of groundwater sampling with the EPA oversight in October 2013. During calendar year 2014, additional work and data evaluations will be performed by the PRPs under EPA oversight. The U.S. Geological Survey, as outlined in the enclosed document, is advising this agency about the groundwater issues at West Lake. The process steps outlined on the attachment will give us some time to complete in order to give the EPA the evaluations needed to inform a West Lake remedy selection. Therefore, I cannot provide a precise timeline for the EPA to select and construct the remedy at this time. I will continue to keep you well informed about this agency's actions and welcome your involvement.

For your convenience, I am enclosing correspondence that the EPA Region 7 recently provided to the Missouri Coalition for the Environment responding to questions about the current conditions. I am also enclosing my recent letter to Congressman Clay, as well as a document which identifies steps to remedy implementation at West Lake Landfill.

We will continue to keep you and your staff informed of updates regarding the West Lake Landfill Superfund Site. If we can be of any further assistance, please feel free to contact me at 913-551-7006, or your staff may call LaTonya Sanders, Congressional Liaison, at 913-551-7555.

Sincerely,

Karl Brooks

Enclosures

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
11201 RENNER BOULEVARD
LENEXA, KS 66219

AUG 23 2013

OFFICE OF
THE REGIONAL ADMINISTRATOR

The Honorable William Lacy Clay
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Clay:

Thank you for your letter of August 2, 2013, to the U.S. Environmental Protection Agency about the West Lake Landfill Site in Bridgeton. I appreciate your responsibility to your constituents who are concerned about the conditions at the West Lake Landfill Site. This agency has heard similar concerns expressed at our public meetings. We recently addressed many of these issues in response to questions posed by the Missouri Coalition for the Environment. For your convenience, I am enclosing copies of the EPA's responses, as well as my recent letter to Senator McCaskill.

Currently, the site does not pose a risk to public health as there are no complete exposure pathways from the radiological waste to human receptors. While groundwater beneath the site contains some contaminants including radium, no one is using this water for any purposes. The site is fenced to prevent access. Air monitoring by the Missouri Department of Natural Resources and the Missouri Department of Health and Senior Services shows no elevated levels of radiation in the air. The EPA is closely monitoring the work at the Bridgeton Sanitary Landfill being done pursuant to an order issued by the Missouri Attorney General with the site owner to address the subsurface oxidation event.

You discuss the elements of the May 2008 Record of Decision and the EPA's path forward. The May 2008 ROD selected as a remedy capping the waste in place using a multi-layer engineered cap, with groundwater monitoring and institutional controls. In addition, the Superfund process includes a review every five years of the protectiveness of the remedy, and if any problems are noted, corrective actions are taken. After the ROD was issued, the EPA continued to receive questions from the public on the remedy. The EPA responded by tasking the responsible parties to perform a Supplemental Feasibility Study under EPA oversight to address these questions. The SFS was completed in late 2011.

At this time, the responsible parties are supplementing the SFS by completing additional work. The work includes the collection of another round of groundwater sampling. The EPA, with the assistance of the U.S. Geological Survey, will study the results of four quarters of groundwater sampling collected this past year to determine if this pathway poses a threat to human health or the environment. In addition to this groundwater evaluation, the responsible parties are also completing, under EPA oversight, additional studies to more fully evaluate excavation, treatment, and cap designs, among other things.

As a point of clarification, the FUSRAP designation is made either by the U.S. Department of Energy, based on criteria set forth in DOE policy or by Congress. The EPA plays no role in selecting sites for FUSRAP. But regardless of whether the EPA manages a site or a site enters the FUSRAP program in which the U.S. Army Corps of Engineers has lead responsibility, cleanup of the site is required by law to

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
11201 RENNER BOULEVARD
LENEXA, KS 66219

AUG 23 2013

OFFICE OF
THE REGIONAL ADMINISTRATOR

Mr. Ed Smith
Missouri Coalition for the Environment
6267 Delmar Boulevard, Suite 2E
St. Louis, Missouri 63130

RE: West Lake Landfill Superfund Site

Dear Mr. Smith and Ms. Chapman:

This responds to your letters of July 25, 2013, and August 8, 2013, with your questions included.

Should you have questions regarding these responses, please contact Region 7 Superfund Division Director, Cecilia Tapia, at 913-551-7733 or tapia.cecilia@epa.gov.

Sincerely,

Karl Brooks

Enclosures

cc: Dawn Chapman

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**Response to July 25, 2013 Letter**

1. How close can the subsurface smoldering event approach West Lake Landfill before the EPA interjects and emergency actions are taken? Meaning, does the EPA have a "red line" for its involvement?

   A. EPA internal experts, as well as the U.S. Geological Survey (USGS), are evaluating the current subsurface smoldering event (SSE) data and make recommendations. The potentially responsible parties (PRPs) are developing contingency plans to address these issues, and EPA and MDNR are and will be evaluating these contingency plans.

2. Has the EPA received any information regarding groundwater flow at the West Lake Landfill from the USGS? Is there a timeframe for USGS involvement?

   A. EPA has tasked the PRPs to collect additional information on groundwater at the site. This is ongoing. EPA has tasked USGS to help interpret the data as it is received so that it will to inform future decision-making.

3. Where exactly will the off-site groundwater samples be collected surrounding the West Lake Landfill Superfund Site? Will a sampling plan be made available for comment before sampling is conducted?

   A. EPA collected off-site groundwater samples at six private wells more than one mile northeast of the West Lake Landfill in July 2013 to help assess background concentrations of contaminants in the alluvial aquifer. These wells were chosen by USGS and EPA because they are the closest to the site.

4. Will EPA provide groundwater sampling (both on-site and off-site) locations, results, and plans with the community?

   A. Yes, we have done so and will continue to do so as the data becomes final. Sampling results are posted to the EPA Region 7 web site.

5. How does the EPA explain levels of Radium-226 and Radium-228 outside of Operable Unit 1? For example: The Responsiveness Summary from 2008 (page 3) states "only four wells exhibited a total radium concentration above the MCL of 5 picocuries per liter (pCi/L)" with the maximum reading being 6.33pCi/L. A map in the Groundwater Monitoring report dated December 14th displays 20 wells that show radium levels above 5pCi/L with PZ-101-SS reading 32.01pCi/L, which is outside of Area-l and Area-2 of Operable Unit 1.

   a) With the increase in the concentration of Radium from the wells, how can the EPA continue to state that the levels of Radium being read are naturally occurring?

   A. EPA assesses the 2012 groundwater data as not proving or disproving the existence of a groundwater contaminant plume at the site. For this reason, EPA has requested that the PRPs conduct three additional rounds of groundwater sampling in 2013 which will enable USGS to provide a more comprehensive picture of current groundwater conditions at the site.

   b) Can the EPA explain the significant increase in wells that showed Radium above 5 pCi/L?

A. USGS is providing technical assistance to EPA to understand and interpret the groundwater results from the 2012 and upcoming 2013 sampling events and determine the background contribution to contaminant concentrations in the aquifer beneath the site.

6. Does the EPA contend that 8,700 tons of leached barium sulfate from Latty Avenue was mixed with 38,000 tons to 39,000 tons of "clean material" as stated in the Responsiveness Summary (page. 13)?

A. It is likely that the soil removed from the Latty Avenue site and mixed with the barium sulfate residue contained residual amounts of the other radiological wastes stored there. However, it is impossible to say how much radiological material this soil contained. EPA has extensive analytical results for the materials actually present in West Lake Landfill.

7. What studies/investigation did the National Remedy and Review Board recommend EPA Region 7 conduct to better understand the West Lake Landfill?

A. The National Remedy and Review Board (NRRB) recommended that: the excavation volume for a full removal of the radiological material be calculated; a partial excavation alternative be evaluated; treatment technologies for the waste involving apatite and/or phosphate be evaluated; the present value costs for all alternatives be recalculated using a 7% discount rate; alternative landfill cap designs be evaluated; and fate and transport modeling of radionuclides in groundwater be conducted. EPA Region 7 directed the PRPs to do these additional studies in a letter dated October 12, 2012. The PRPs are doing these studies under EPA oversight.

8. Why was the fence along OU-l Area 1 moved closer to the St. Charles Rock Road? What day(s) was the new fence constructed? By whose order?

A. In March 2013, EPA requested that the PRPs install a fence on the southeast side of OU-1 Area 1, between this landfill cell and the adjacent North Quarry Landfill cell, to prevent workers responding to the subsurface smoldering event at the Bridgeton Sanitary Landfill from accidentally entering Area 1. The PRPs agreed to do this, and also decided to upgrade existing perimeter fences around both OU-1 areas at the same time. The fence installation began in late May 2013 and concluded in June.

9. Will the EPA provide digital records on its website of all documents in the "administrative record" and "public record" concerning West Lake Landfill?

A. EPA recently assessed the condition of the Administrative Record stored in Bridgeton and determined that access to these documents needs to be improved. EPA is considering options for improving access and/or placing these documents on our webpage.

10. How many Superfund Sites in Region 7 involve radiological contamination? Has EPA Region 7 executed a ROD at a radioactive Superfund Site? If so, which ones and when?

A. There are five sites in the Superfund remedial program in Region 7 with radiological contamination: the St. Louis Airport Sites (SLAPS), West Lake Landfill, Weldon Springs, the Lake City Army Ammunition Plant (LCAAP) and the Iowa Army Ammunition Plant (IAAP). ROD-selected remedial actions for radiological contamination have been implemented at Weldon Springs (1997-2001), Iowa Army Ammunition Plant (RA ongoing now), the St. Louis Airport Sites (RA ongoing now), and Lake City Army Ammunition Plant (2008-2009).

11. How can the EPA conclude that the radioactive materials are contained based on the ASPECT plane, which only measured gamma radiation up to one foot, while the radioactive wastes are buried up to 15 feet deep and there is no liner to prevent groundwater contamination?

A. The intent of the ASPECT flyover was to determine if any surface radiological materials had migrated. The results showed that this had not occurred. To define the extent of radiological materials at depth, extensive soil and waste data collected during the Remedial Investigation defined the extent of the radioactive material in OU1.

12. Has the EPA conducted community interviews of "impacted communities" in the last ten years? If yes, does the EPA have evidence to support that community interviews were conducted? If yes, how have community interviews guided the EPA's response to community concerns? If no, does the EPA plan on conducting community interviews prior to the next Record of Decision?

A. EPA conducted initial community interviews in 1994. Since that time, EPA has canvassed community members, elected officials, and other interested stakeholders by phone and at community meetings throughout the history of the site. On January 9, 2013, EPA conducted door-to-door interviews. Follow-up phone calls were conducted with 20 community points of contact, which included residents, businesses, churches, and academia. In March 2013, numerous contacts were made with members of the Spanish Village community and the nearby trailer park. The focus of the March interviews was to share information about upcoming EPA meetings and determine how area residents and other local stakeholders preferred receive information from EPA, whether by mail, telephone, internet, etc. Community interviews and interactions are consistently used to provide EPA with information about community concerns. Social media are also used to gauge the community climate. EPA will continue to interact with community members and other West Lake Landfill stakeholders throughout the Superfund process. EPA followed up later in March and April 2013 with targeted interviews of community members.

**Response to August 8, 2013 Letter**

**Smoldering Event**

1. How close can the subsurface smoldering event approach OU-1, Area 1 before the EPA interjects and emergency actions are taken?

**A.** EPA internal experts, as well as the U.S. Geological Survey (USGS), are evaluating the current subsurface smoldering event (SSE) data and make recommendations. The potentially responsible parties (PRPs) are developing contingency plans to address these issues, and EPA and MDNR are and will be evaluating these contingency plans.

2. Does the EPA have a "red line" for its involvement?

**A.** EPA internal experts, as well as the U.S. Geological Survey (USGS), are evaluating the current subsurface smoldering event (SSE) data and make recommendations. The potentially responsible parties (PRPs) are developing contingency plans to address these issues, and EPA and MDNR are and will be evaluating these contingency plans.

3. Is there a scenario in which the EPA becomes the lead agency as it relates to the subsurface smoldering event? If so, please explain.

**A.** No. MDNR administers the approved solid waste disposal program in Missouri and issued a solid waste landfill permit for the cell with the SSE. MDNR's permit and its solid waste regulations that apply to the landfill are not enforceable by EPA. EPA has no authority to address Subtitle D (solid waste) landfills. This authority was fully delegated to the state.

**Groundwater Monitoring Inside and Outside the Landfill**

4. Has the EPA received any information regarding groundwater flow at the West Lake Landfill from the USGS?

**A.** EPA has asked USGS to review existing data and the new groundwater sampling results as they become available. USGS will not finalize its assessment of hydrologic conditions at the site until after the results of all four groundwater sampling events are validated.

5. Is there a timeline for USGS involvement? If so, will the EPA share the expected timeline?

**A.** USGS will not finalize its assessment of hydrologic conditions at the site until after the results of all four groundwater sampling events are validated. USGS will likely continue to assist EPA in interpreting this data through the proposed plan stage.

6. Where exactly will the off-site groundwater samples be collected surrounding the West Lake Landfill Superfund Site?

**A.** EPA collected off-site groundwater samples at six private wells more than one mile northeast of West Lake in July 2013 to help assess background concentrations of contaminants in the alluvial aquifer.

These wells were chosen because they are the closest to the site. Results from these wells will be released with the results of the July 2013 on-site groundwater sampling event.
7. The letter dated 7/26/2013 states "the EPA will have a better understanding of current groundwater conditions after the Agency...reviews the next two rounds of groundwater sampling." Considering groundwater sampling is conducted on a quarterly basis, and at the EPA meeting on 6/25/2013, administrator Karl Brooks stated that it could be as little as 400 days** before the subsurface landfill fire hits the radioactive waste, why does the EPA propose to wait 6 months (180 days) before understanding groundwater conditions?

**This number was calculated by the administrator based on the assumption that the fire is 1,200 feet away from OU-1, using a maximum SSE progression of 3ft/day. However, the current movement of the fire is figured at around .5ft/day with a maximum of 2ft/day, putting the minimum time before the fire hits the radioactive wastes at 600 days.

**A.** This statement was not made by Administrator Brooks but by a representative of MDNR. This number was calculated based on the assumption that the event is 1,200 feet away from OU-1, using a maximum SSE progression of 3ft/day. However, the current movement of the event is now estimated at around .5ft/day with a maximum of 2ft/day, extending the minimum time before the event reaches OU-1 at 600 days. EPA believes the contingency measures required under the Missouri Attorney General's consent order with Republic will prevent the subsurface oxidation event from reaching the radioactively contaminated landfill cells. However, EPA Region 7 continues to closely monitor the events in the Bridgeton Sanitary Landfill, with the assistance of EPA's Office of Research and Development. The groundwater sampling is being conducted to assess possible migration of the radiological wastes in OU-1 to groundwater, a process that is separate from the migration of the subsurface oxidation event in the South Quarry Landfill.

8. How will the USGS data be made publicly available?

**A.** The USGS assessment of hydrologic conditions at the site will be released when it is finalized. It will be placed on EPA's website.

9. When will the USGS data be publicly available?

**A.** The USGS assessment of hydrologic conditions at the site will be released when it is finalized. This will necessarily occur after the fourth round of groundwater sampling occurs in October 2013 and the final data report is received in early 2014.

**National Remedy and Review Board Recommendations**

10. What studies/investigation did the National Remedy and Review Board recommend EPA Region 7 conduct to better understand the West Lake Landfill? Please include all recommendations from the NRRB.

**A.** The NRRB recommended that: the excavation volume for a full removal of the radiological material be calculated; a partial excavation alternative be evaluated; treatment technologies for the waste involving apatite and/or phosphate be evaluated; the present value costs for all alternatives be recalculated using a 7% discount rate; alternative landfill cap designs be evaluated; and fate and

transport modeling of radionuclides in groundwater be conducted. EPA Region 7 asked the PRPs to do these additional studies in a letter dated October 12, 2012. The PRPs have agreed to do these studies.

11. Did EPA Region 7 provide the NRRB with concerns or reports from the general public?

**A.** Region 7 informed the NRRB that the Supplemental Feasibility Study was conducted to address continuing concerns expressed by the public about the ROD-selected remedy.

12. Did Region 7 provide NRRB with Dr. Bob Criss' report submitted to the EPA on March 15, 2013?

**A.** No. Region 7's consultation with the NRRB, and the NRRB's comments, occurred well before EPA received this document. The NRRB does not have an ongoing role in the management of the site; its function is to review a proposed remedy.

13. What information has the NRRB received as it relates to the subsurface smoldering event?

**A.** None. The NRRB does not have an ongoing role in the management of the site; its function is to review a proposed remedy.

14. Has the presence of the subsurface smoldering event triggered further recommendations from the NRRB as it relates to OU-1?

**A.** No. The NRRB does not have an ongoing role in the management of the site; its function is to review a proposed remedy. Future NRRB consultations will include this information as appropriate.

**Radium in Groundwater**

15. Can the EPA explain why levels of Radium-226 and Radium-228 are above the Maximum Contaminant Level (MCL) throughout the landfill, outside of Operable Unit 1? For example: The Responsiveness Summary from 2008 (page 3) states "only four wells exhibited a total radium concentration above the MCL of 5 picocuries per liter (pCi/L)" with the maximum reading being 6.33 pCi/L. A map in the Groundwater Monitoring report dated December 14th displays 20 wells that show radium levels above 5pCi/l with PZ-101-SS reading 32.01pCi/L, which is outside of Area-1 and Area-2 of Operable Unit 1.

**A.** EPA assesses the 2012 groundwater data as not proving or disproving the existence of a groundwater contaminant plume at the site. For this reason, EPA has requested that the PRPs conduct three additional rounds of groundwater sampling in 2013 which will enable USGS to provide a more comprehensive picture of current groundwater conditions at the site.

16. With the increase in the concentration of Radium found the wells, how can the EPA continue to state that the levels of Radium being read are naturally occurring, as the EPA stated at the January 17 public meeting at the Machinists Union Hall?

**A.** EPA is obtaining assistance from the USGS to interpret the groundwater results from the 2012 and upcoming 2013 sampling events and to determine the background contribution to contaminant concentrations in the aquifer beneath the site.

17. If there is "little to no Ra-228" in the landfill waste at West Lake Landfill OU-1, where is the Radium 228 in the groundwater coming from?

**A.** EPA is obtaining assistance from the USGS to understand and interpret the groundwater results from the 2012 and upcoming 2013 sampling events and determine the background contribution to contaminant concentrations in the aquifer beneath the site.

18. How can the EPA assert that "recent groundwater results indicate that contamination is not migrating substantial distances from its original location where the radioactive waste was disposed" when wells outside of OU-1 and OU-2 consistently read radium levels higher than the MCL and no reports of off-site testing have yet been posted?

**A.** It is EPA's position that the 2012 and 2013 groundwater data do not prove or disprove the existence of a groundwater contaminant plume at the site. For this reason, EPA has requested that the PRPs conduct three additional rounds of groundwater sampling in 2013 to provide a more comprehensive picture of current groundwater conditions at the site. EPA collected off-site groundwater samples at six private wells more than one mile northeast of West Lake in July 2013 to help assess background concentrations of contaminants in the alluvial aquifer. These wells were chosen because they are the closest to the site.

[NOTE: The Missouri Coalition letter received by EPA did not contain questions numbered 19 or 20.]

21. What testing protocol or investigation will be needed to ascertain the source of the radioactivity in the groundwater?

**A.** The four quarterly site-wide groundwater sampling events, along with USGS' interpretation of this data, are intended to do this. Existing data from the 2000 Remedial Investigation and other historical reports will be also be used as necessary.

22. In the groundwater reports from tests in August 2012 and April 2013, the EPA posted data for both combined total radium 226 and 228 and combined dissolved radium 226 and 228. It is our understanding that total radium comes from unfiltered samples while dissolved radium is gathered from filtered samples, thus the total radium should be higher than the dissolved radium for its respective sampling location. How does the EPA account for the last two groundwater reports reading higher dissolved radium than total radium in 30% of the wells?

**A.** Your understanding of this issue is correct. Both EPA and USGS have considered this issue and its potential causes, including variations in groundwater concentrations during the sampling process and the procedures for handling the samples once they have been collected. Sample handling procedures were changed slightly for the July 2013 sampling event to minimize any chance that sample handling may have contributed to total radium results exceeding dissolved radium results in some previous samples.

**Long Term Risks**

23. The EPA said in its response: "The EPA is overseeing work by the potentially responsible parties which includes the evaluation of risk associated with multiple disasters such as fire, tornado, and earthquake." Is the EPA or PRPs working on a new Risk Assessment for West Lake Landfill? If so, when will it be published? If not, does the EPA intend to provide a new Risk Assessment that includes landfill fire risks?

**A.** The evaluation of these risks will be presented in the Supplemental SFS report, along with the results of the six studies recommended by the NRRB. Region 7 requested that the PRPs perform this additional work, and they agreed to do so.

24. Is the EPA or PRPs taking into consideration the possibility of concurrent disasters taking place in its risk assessment?

**A.** The PRPs are evaluating multiple disaster scenarios in the Supplemental SFS.

[NOTE: The Missouri Coalition letter received by EPA did not contain questions numbered 25, 26 or 27.]

**Leached Barium Sulfate**

28. In the EPA response on Leached Barium Sulfate, too many assumptions are made and more clarity is needed. The EPA's justification that Cotter Corporation found the materials valuable and therefore "it is likely that very little of this material was left onsite" is an inadequate assumption about what was actually dumped at the West Lake Landfill as it relates to public health. Also, Atomic Energy Commission documents appear to contradict the basis of what was mixed with the 8,700 tons of Leached Barium Sulfate. It's MCE's understanding the material eventually shipped to Colorado sat outside, unprotected from the elements for years. Has the EPA considered the possibility that the soils from Latty Avenue contain highly soluble radioisotopes based on the exposure of the material at Latty to heavy rains over the course of several years?

**A.** It is likely that the soil removed from the Latty Avenue site and mixed with the barium sulfate residue contained residual amounts of the other radiological wastes stored there. However, it is impossible to say how much radiological material this soil contained or the processes by which the radiological material may have interacted with the soil. EPA has extensive analytical results for the materials actually present in West Lake Landfill, and these results are appropriate for use in remedy selection.

29. The EPA's understanding of what was dumped at the West Lake Landfill is inaccurate as recently as 2008 based on the Atomic Energy Commission's 1974 investigation of Latty Avenue, which has been shared with EPA Region 7. Does the EPA plan to continue basing its understanding of what was dumped at West Lake Landfill on what appear to be inaccurate NRC reports?

**A.** EPA is relying on the NRC's report for an accounting of this material. EPA would prefer that samples of the original residue had been analyzed. However, EPA was not the lead agency on the Site at that time. NRC has well-established expertise in assessing radiological sites, and despite speculation by the commenter to the contrary, no credible evidence refutes NRC's conclusion that leached barium sulfate residue was placed in the West Lake Landfill.

30. Has the EPA analyzed the West Lake Landfill as recommended by Dr. Criss in point 8 of his report submitted March 15, 2013? If so, where in the volumes of reports on West Lake Landfill can this information be found? EPA's guidance here is most appreciated.

"Additional study of the site is needed. The character of the radioactive materials and processing wastes originally dumped at West Lake Landfill needs to be determined. Relevant, old chemical and radiological analyses of these materials probably exist, and physical samples may still exist. In lieu of these being found, radioactively-contaminated material from the landfill needs to be excavated and collected, processed by standard mineral separation techniques, and then analyzed and examined to determine the chemical, physical and radiological character of the separates of concern. Accurate determination of elemental ratios including Ra/Ba, Ra/U, Ba/U, Th/U, Ba/SO4, etc. by ICP-MS and other modern techniques would clearly help. Groundwater analyses need to include major elements, physical parameters such as electrical conductivity, and stable isotope data so that radionuclides can be definitively traced to their sources by well-understood methods (e.g., Criss, 1999; Hasenmueller and Criss, 2013). It is not acceptable that so little is known about this radwaste after more than 30 years of "study". Regular monitoring of the levels and radionuclide contents of groundwater also need to be undertaken. Several dozen new monitoring sites must be developed to establish conditions at least 1000 feet away from the landfill boundaries, particularly north and northwest of Area 2, to establish the scale of groundwater contamination and migration."

**A.** EPA is relying on the NRC's report for an accounting of this material. EPA would prefer that samples of the original residue had been analyzed. However, EPA was not the lead agency on the Site at that time. NRC has well-established expertise in assessing radiological sites, and despite speculation by the commenter to the contrary, no credible evidence refutes NRC's conclusion that leached barium sulfate residue was placed in the West Lake Landfill. The commenter's suggestion here that samples of the radiologically contaminated material within the landfill should be dug up and analyzed now to obtain results indicative of the original barium sulfate waste is not sound scientifically. This material has been in contact with a diverse mixture of soils, municipal solid waste, and other wastes in uncontrolled conditions for the past forty years. The original radiological material has been unavoidably altered by this contact, and there is no way the material could be reliably "re-constituted" now.

31. Was inductively coupled plasma mass spectrometry (ICP-MS) used to analyze soil samples in OU-1?

**A.** No. Isotopes of radium, thorium and uranium cannot be measured by ICP-MS. They are measured using methods that analyze the radioactive emissions of these elements (primarily alpha spectrometry). Priority pollutant metals (including barium, copper, lead, mercury, etc) in soil were measured using EPA Method 6010, which uses inductively coupled plasma – atomic emission spectrometry (ICP-AES). Volatile and semi-volatile organic compounds cannot be measured by ICP-MS.

**Perimeter Fence**

32. Why was the fence along OU-1 Area 1 moved closer to the St. Charles Rock Road?

**A.** In March 2013, EPA requested that the PRPs install a fence on the southeast side of OU-1 Area 1, between this landfill cell and the adjacent North Quarry Landfill cell, to prevent workers responding to the subsurface oxidation event at the Bridgeton Sanitary Landfill from accidentally entering Area 1. The

PRPs agreed to do this, and they also decided to upgrade existing perimeter fences around both OU-1 areas at the same time.

33. When was the new fence constructed?

**A.** The fence installation began in late May 2013 and concluded in June.

34. By whose order?

**A.** The PRPs decided to upgrade existing perimeter fences around both OU-1 areas at the same time they were installing the fence EPA requested between OU-1 Area 1 and the adjacent North Quarry Landfill cell.

**Community Interviews**

35. Can EPA provide evidence on its website to support that community interviews were conducted between 1994 and 2013?

A. EPA has conducted formal and informal interviews throughout the history of the West Lake Landfill Superfund Site within the timeframe addressed. Interviews were conducted in concert with the initial Community Involvement Plan by an EPA contractor who was housed in St. Louis, Missouri in 1994. In 2006, EPA held two public meetings where comments were shared by community members. In 2008, another public meeting was held where comments were again shared. In the fall of 2011, the Community Involvement Plan was updated and phone interviews were conducted to gauge comments and concerns. In January 2013 and June 2013 public meetings were held where community members weighed in with comments and concerns. In March 2013 EPA's Environmental Justice program made contact with several individuals that attended EPA's January meeting to discern how individual neighborhood residents and businesses receive their information.

   EPA does not place community interviews and/or responses on its website for any Superfund site. EPA has maintained a consistent communication exchange with Bridgeton and surrounding cities at all community levels, including mayors, boards, individual residents, and health institutes over the past two decades. Also, in maintaining transparency, our Region 7 office has a toll-free phone number for community members to use to share concerns and recommendations.

36. How have the community interviews guided the EPA's response to community concerns? This question was not answered in the EPA's last response.

**A.** As a result of recent community interviews, it was determined that the community preferred face-to-face meetings to on-line "town hall" meetings. EPA plans to hold further face-to-face meetings with the community to respond to their concerns.

37. EPA Superfund decision making is supposed to be guided in part by what local communities want. How does EPA qualify and/or quantify community concerns or preferred remedial action when creating a Record of Decision, or in this case, an amended ROD?

**A.** EPA will evaluate the new groundwater data and the additional analyses the PRPs are doing. EPA will present this information to the National Remedy Review Board, and then will hold a public meeting

and comment period for the new proposed plan. EPA is required to respond to all public comments received during the public comment period.

**Public Record**

38. Will the EPA provide digital records on its website of all documents in the "administrative record" and "public record" concerning West Lake Landfill?

**A.** EPA recently assessed the condition of the Administrative Record stored in Bridgeton and determined that access to these documents needs to be improved. EPA is considering options for improving access and/or placing these documents on our webpage.

39. Does the EPA have different delineations for "administrative record" and "public record?"

A. No, the Administrative Record is the record to support EPA decisions and is made available to the public.

**Other Superfund Sites**

40. How many Superfund Sites in Region 7 involve radiological contamination?

A. There are five sites in the Superfund remedial program in Region 7 with radiological contamination: the St. Louis Airport Sites (SLAPS), West Lake Landfill, Weldon Springs, the Lake City Army Ammunition Plant (LCAAP) and the Iowa Army Ammunition Plant (IAAAP).

41. Has EPA Region 7 executed a ROD at a radioactive Superfund Site? If so, which ones and when?

**A.** ROD-selected remedial actions for radiological contamination have been implemented at Weldon Springs (1997-2001), Iowa Army Ammunition Plant (RA ongoing now), the St. Louis Airport Sites (RA ongoing now), and Lake City Army Ammunition Plant (2008-2009).

**Schedule**

42. Does the EPA have a schedule moving forward that it can provide regarding the decision making process?

**A.** After PRPs complete additional work which EPA had requested (one more groundwater monitoring event in 2013, preparation of six studies in 2014), steps remaining in the decision making process include:

- PRPs submit supplement to SFS to take into account results of additional work.
- EPA consults with NRRB about Proposed Plan.
- EPA issues Proposed Plan which identifies changes to 2008 ROD remedy.
- Public comments on plan and public meeting held.
- EPA issues amended ROD based on Proposed Plan and public comments.
- EPA resumes negotiations of Consent Decree with PRPs.

- DOJ lodges negotiated Consent Decree with Court, publishes notice and takes public comment.
- EPA/DOJ respond to public comment and DOJ files motion to enter.
- Assuming Court enters Consent Decree, implementation of the remedy begins.

CLAIRE McCASKILL
MISSOURI

506 HART SENATE OFFICE BUILDING
WASHINGTON, DC 20510
(202) 224-6154
FAX: (202) 228-6326
http://mccaskill.senate.gov

# United States Senate

WASHINGTON, DC 20510

COMMITTEES:
ARMED SERVICES

COMMERCE, SCIENCE AND TRANSPORTATION
SUBCOMMITTEE ON CONSUMER PROTECTION, PRODUCT SAFETY, AND INSURANCE
CHAIRMAN

HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS
SUBCOMMITTEE ON FINANCIAL AND CONTRACTING OVERSIGHT
CHAIRMAN

SPECIAL COMMITTEE ON AGING

July 29, 2013

Karl Brooks
Regional Administrator
US EPA Region 7
11201 Renner Blvd.
Lenexa, KS 66219

Dear Dr. Brooks,

I am writing in regard to the West Lake Landfill, located in Bridgeton, Missouri. The 200 acre West Lake Landfill became radiologically contaminated in 1973 when soils mixed with uranium ore processing residues were used as daily cover in the landfilling operation, and the site was added to the Environmental Protection Agency's National Priority List of hazardous sites in 1990.

First, I want to thank you for your response to my previous letter regarding the West Lake Landfill. I appreciate your commitment to ensuring that local residents and other concerned citizens are provided access to information and issue experts. I also appreciate your commitment to updating the Environmental Protection Agency (EPA) web page with answers to questions submitted at the most recent public meeting that you did not have time to answer.

Going forward, I urge you to work closely with local community organizations as you continue your efforts on the West Lake Landfill. It is my understanding that the Missouri Coalition for the Environment (MCE), a citizen's non-profit organization, has coordinated with your agency to submit questions regarding the West Lake Landfill on a monthly basis. I share their belief that local residents will be best served if organizations like MCE are provided a regular opportunity to submit written questions to your agency for response in a timely manner, and I ask that you make every possible effort to accommodate their requests.

Additionally, I know that many local residents are frustrated by what they view as an unacceptably lengthy delay in determining and carrying-out a final plan to remediate the radioactive waste at the West Lake Landfill. I appreciate that EPA has provided some information regarding forthcoming rounds of sampling. However, I believe that local residents deserve to be provided with additional information regarding the time-table for completing testing, making a final determination on how remediation should be accomplished, and initiating remediation activities on the site. I respectfully request that you develop and make public a time-table as soon as possible.

I will be closely monitoring developments in this important matter. Thank you, in advance, for your time and attention.

Sincerely,

Claire McCaskill
United States Senator

555 INDEPENDENCE
ROOM 1600
CAPE GIRARDEAU, MO 63703
(573) 651-0984
FAX: (573) 334-4278

915 EAST ASH STREET
COLUMBIA, MO 65201
(573) 442-7130
FAX: (573) 442-7140

4141 PENNSYLVANIA AVENUE
SUITE 101
KANSAS CITY, MO 64111
(816) 421-1639
FAX: (816) 421-2582

8850 DELMAR BOULEVARD
SUITE A
ST. LOUIS, MO 63112
(314) 367-1364
FAX: (314) 361-8649

324 PARK CENTRAL WEST
SUITE 101
SPRINGFIELD, MO 65806
(417) 868-8746
FAX: (417) 831-1349

**OFFICE OF SENATOR CLAIRE MCCASKILL – MISSOURI**
**SENATE HART OFFICE BUILDING, SUITE 506**

**WASHINGTON, DC 20510**
**PHONE: 202.224.6154**
**FAX: 202.228.6326**

| | |
|---|---|
| **TO:** Karl Brooks | **DATE:** 7/29/13 |
| **FAX:** (202) 561-1519 | **PHONE:** |
| **RE:** Westlake Landfill | **PAGES:** 1 |
| **FROM:** Sen. McCaskill | |

**NOTES/COMMENTS:**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
11201 RENNER BOULEVARD
LENEXA, KS 66219

AUG 23 2013

OFFICE OF
THE REGIONAL ADMINISTRATOR

Mr. Charlie A. Dooley
St. Louis County Executive
41 South Central Avenue
St. Louis, Missouri 66219

Dear Mr. Dooley:

Thank you for your letter of August 5, 2013, to the U.S. Environmental Protection Agency, Region 7 about the Bridgeton and West Lake Landfills in Bridgeton. We appreciate your concern regarding the conditions at the Bridgeton and West Lake landfills. As you acknowledged, the EPA is working closely with the Missouri Department of Natural Resources and the Missouri Attorney General's Office. The federal Agency for Toxic Substance and Disease Registry and part of the U.S. Department of Health and Human Services, is actively involved with human health issues related to the landfills and works closely with the Missouri Department of Health and Senior Services. The EPA similarly maintains active communication with ATSDR and MDHSS.

For your convenience, I am enclosing correspondence that EPA Region 7 recently provided to the Missouri Coalition for the Environment responding to questions about the current conditions. In addition, I am enclosing a document which identifies steps involved in the remedy implementation at West Lake landfill.

The Bridgeton Landfill, unlike West Lake Landfill, is subject to state regulation. The Bridgeton Landfill's owners are presently performing work under an order with the State of Missouri. The EPA participates closely in discussions with these parties and national experts are working with EPA Region 7 to evaluate Bridgeton's subsurface smoldering event.

We will continue to keep you and your staff informed of updates regarding the West Lake Landfill Superfund Site. If we can be of any further assistance, please feel free to contact me at 913-551-7006, or your staff may call Debbie Kring, Local Government Liaison, at 913-551-7725.

Sincerely,

Karl Brooks

Enclosures

RECYCLED 100% FIBER

**Response to July 25, 2013 Letter**

1. How close can the subsurface smoldering event approach West Lake Landfill before the EPA interjects and emergency actions are taken? Meaning, does the EPA have a "red line" for its involvement?

   A. EPA internal experts, as well as the U.S. Geological Survey (USGS), are evaluating the current subsurface smoldering event (SSE) data and make recommendations. The potentially responsible parties (PRPs) are developing contingency plans to address these issues, and EPA and MDNR are and will be evaluating these contingency plans.

2. Has the EPA received any information regarding groundwater flow at the West Lake Landfill from the USGS? Is there a timeframe for USGS involvement?

   A. EPA has tasked the PRPs to collect additional information on groundwater at the site. This is ongoing. EPA has tasked USGS to help interpret the data as it is received so that it will to inform future decision-making.

3. Where exactly will the off-site groundwater samples be collected surrounding the West Lake Landfill Superfund Site? Will a sampling plan be made available for comment before sampling is conducted?

   A. EPA collected off-site groundwater samples at six private wells more than one mile northeast of the West Lake Landfill in July 2013 to help assess background concentrations of contaminants in the alluvial aquifer. These wells were chosen by USGS and EPA because they are the closest to the site.

4. Will EPA provide groundwater sampling (both on-site and off-site) locations, results, and plans with the community?

   A. Yes, we have done so and will continue to do so as the data becomes final. Sampling results are posted to the EPA Region 7 web site.

5. How does the EPA explain levels of Radium-226 and Radium-228 outside of Operable Unit 1? For example: The Responsiveness Summary from 2008 (page 3) states "only four wells exhibited a total radium concentration above the MCL of 5 picocuries per liter (pCi/L)" with the maximum reading being 6.33pCi/L. A map in the Groundwater Monitoring report dated December 14th displays 20 wells that show radium levels above 5pCi/L with PZ-101-SS reading 32.01pCi/L, which is outside of Area-l and Area-2 of Operable Unit 1.

   a) With the increase in the concentration of Radium from the wells, how can the EPA continue to state that the levels of Radium being read are naturally occurring?

   A. EPA assesses the 2012 groundwater data as not proving or disproving the existence of a groundwater contaminant plume at the site. For this reason, EPA has requested that the PRPs conduct three additional rounds of groundwater sampling in 2013 which will enable USGS to provide a more comprehensive picture of current groundwater conditions at the site.

   b) Can the EPA explain the significant increase in wells that showed Radium above 5 pCi/L?

A. USGS is providing technical assistance to EPA to understand and interpret the groundwater results from the 2012 and upcoming 2013 sampling events and determine the background contribution to contaminant concentrations in the aquifer beneath the site.

6. Does the EPA contend that 8,700 tons of leached barium sulfate from Latty Avenue was mixed with 38,000 tons to 39,000 tons of "clean material" as stated in the Responsiveness Summary (page. 13)?

A. It is likely that the soil removed from the Latty Avenue site and mixed with the barium sulfate residue contained residual amounts of the other radiological wastes stored there. However, it is impossible to say how much radiological material this soil contained. EPA has extensive analytical results for the materials actually present in West Lake Landfill.

7. What studies/investigation did the National Remedy and Review Board recommend EPA Region 7 conduct to better understand the West Lake Landfill?

A. The National Remedy and Review Board (NRRB) recommended that: the excavation volume for a full removal of the radiological material be calculated; a partial excavation alternative be evaluated; treatment technologies for the waste involving apatite and/or phosphate be evaluated; the present value costs for all alternatives be recalculated using a 7% discount rate; alternative landfill cap designs be evaluated; and fate and transport modeling of radionuclides in groundwater be conducted. EPA Region 7 directed the PRPs to do these additional studies in a letter dated October 12, 2012. The PRPs are doing these studies under EPA oversight.

8. Why was the fence along OU-l Area 1 moved closer to the St. Charles Rock Road? What day(s) was the new fence constructed? By whose order?

A. In March 2013, EPA requested that the PRPs install a fence on the southeast side of OU-1 Area 1, between this landfill cell and the adjacent North Quarry Landfill cell, to prevent workers responding to the subsurface smoldering event at the Bridgeton Sanitary Landfill from accidentally entering Area 1. The PRPs agreed to do this, and also decided to upgrade existing perimeter fences around both OU-1 areas at the same time. The fence installation began in late May 2013 and concluded in June.

9. Will the EPA provide digital records on its website of all documents in the "administrative record" and "public record" concerning West Lake Landfill?

A. EPA recently assessed the condition of the Administrative Record stored in Bridgeton and determined that access to these documents needs to be improved. EPA is considering options for improving access and/or placing these documents on our webpage.

10. How many Superfund Sites in Region 7 involve radiological contamination? Has EPA Region 7 executed a ROD at a radioactive Superfund Site? If so, which ones and when?

A. There are five sites in the Superfund remedial program in Region 7 with radiological contamination: the St. Louis Airport Sites (SLAPS), West Lake Landfill, Weldon Springs, the Lake City Army Ammunition Plant (LCAAP) and the Iowa Army Ammunition Plant (IAAP). ROD-selected remedial actions for radiological contamination have been implemented at Weldon Springs (1997-2001), Iowa Army Ammunition Plant (RA ongoing now), the St. Louis Airport Sites (RA ongoing now), and Lake City Army Ammunition Plant (2008-2009).

11. How can the EPA conclude that the radioactive materials are contained based on the ASPECT plane, which only measured gamma radiation up to one foot, while the radioactive wastes are buried up to 15 feet deep and there is no liner to prevent groundwater contamination?

A. The intent of the ASPECT flyover was to determine if any surface radiological materials had migrated. The results showed that this had not occurred. To define the extent of radiological materials at depth, extensive soil and waste data collected during the Remedial Investigation defined the extent of the radioactive material in OU1.

12. Has the EPA conducted community interviews of "impacted communities" in the last ten years? If yes, does the EPA have evidence to support that community interviews were conducted? If yes, how have community interviews guided the EPA's response to community concerns? If no, does the EPA plan on conducting community interviews prior to the next Record of Decision?

A. EPA conducted initial community interviews in 1994. Since that time, EPA has canvassed community members, elected officials, and other interested stakeholders by phone and at community meetings throughout the history of the site. On January 9, 2013, EPA conducted door-to-door interviews. Follow-up phone calls were conducted with 20 community points of contact, which included residents, businesses, churches, and academia. In March 2013, numerous contacts were made with members of the Spanish Village community and the nearby trailer park. The focus of the March interviews was to share information about upcoming EPA meetings and determine how area residents and other local stakeholders preferred receive information from EPA, whether by mail, telephone, internet, etc. Community interviews and interactions are consistently used to provide EPA with information about community concerns. Social media are also used to gauge the community climate. EPA will continue to interact with community members and other West Lake Landfill stakeholders throughout the Superfund process. EPA followed up later in March and April 2013 with targeted interviews of community members.

**Response to August 8, 2013 Letter**

**Smoldering Event**

1. How close can the subsurface smoldering event approach OU-1, Area 1 before the EPA interjects and emergency actions are taken?

**A.** EPA internal experts, as well as the U.S. Geological Survey (USGS), are evaluating the current subsurface smoldering event (SSE) data and make recommendations. The potentially responsible parties (PRPs) are developing contingency plans to address these issues, and EPA and MDNR are and will be evaluating these contingency plans.

2. Does the EPA have a "red line" for its involvement?

**A.** EPA internal experts, as well as the U.S. Geological Survey (USGS), are evaluating the current subsurface smoldering event (SSE) data and make recommendations. The potentially responsible parties (PRPs) are developing contingency plans to address these issues, and EPA and MDNR are and will be evaluating these contingency plans.

3. Is there a scenario in which the EPA becomes the lead agency as it relates to the subsurface smoldering event? If so, please explain.

**A.** No. MDNR administers the approved solid waste disposal program in Missouri and issued a solid waste landfill permit for the cell with the SSE. MDNR's permit and its solid waste regulations that apply to the landfill are not enforceable by EPA. EPA has no authority to address Subtitle D (solid waste) landfills. This authority was fully delegated to the state.

**Groundwater Monitoring Inside and Outside the Landfill**

4. Has the EPA received any information regarding groundwater flow at the West Lake Landfill from the USGS?

**A.** EPA has asked USGS to review existing data and the new groundwater sampling results as they become available. USGS will not finalize its assessment of hydrologic conditions at the site until after the results of all four groundwater sampling events are validated.

5. Is there a timeline for USGS involvement? If so, will the EPA share the expected timeline?

**A.** USGS will not finalize its assessment of hydrologic conditions at the site until after the results of all four groundwater sampling events are validated. USGS will likely continue to assist EPA in interpreting this data through the proposed plan stage.

6. Where exactly will the off-site groundwater samples be collected surrounding the West Lake Landfill Superfund Site?

**A.** EPA collected off-site groundwater samples at six private wells more than one mile northeast of West Lake in July 2013 to help assess background concentrations of contaminants in the alluvial aquifer.

These wells were chosen because they are the closest to the site. Results from these wells will be released with the results of the July 2013 on-site groundwater sampling event.
7. The letter dated 7/26/2013 states "the EPA will have a better understanding of current groundwater conditions after the Agency...reviews the next two rounds of groundwater sampling." Considering groundwater sampling is conducted on a quarterly basis, and at the EPA meeting on 6/25/2013, administrator Karl Brooks stated that it could be as little as 400 days** before the subsurface landfill fire hits the radioactive waste, why does the EPA propose to wait 6 months (180 days) before understanding groundwater conditions?

**This number was calculated by the administrator based on the assumption that the fire is 1,200 feet away from OU-1, using a maximum SSE progression of 3ft/day. However, the current movement of the fire is figured at around .5ft/day with a maximum of 2ft/day, putting the minimum time before the fire hits the radioactive wastes at 600 days.

**A.** This statement was not made by Administrator Brooks but by a representative of MDNR. This number was calculated based on the assumption that the event is 1,200 feet away from OU-1, using a maximum SSE progression of 3ft/day. However, the current movement of the event is now estimated at around .5ft/day with a maximum of 2ft/day, extending the minimum time before the event reaches OU-1 at 600 days. EPA believes the contingency measures required under the Missouri Attorney General's consent order with Republic will prevent the subsurface oxidation event from reaching the radioactively contaminated landfill cells. However, EPA Region 7 continues to closely monitor the events in the Bridgeton Sanitary Landfill, with the assistance of EPA's Office of Research and Development. The groundwater sampling is being conducted to assess possible migration of the radiological wastes in OU-1 to groundwater, a process that is separate from the migration of the subsurface oxidation event in the South Quarry Landfill.

8. How will the USGS data be made publicly available?

**A.** The USGS assessment of hydrologic conditions at the site will be released when it is finalized. It will be placed on EPA's website.

9. When will the USGS data be publicly available?

**A.** The USGS assessment of hydrologic conditions at the site will be released when it is finalized. This will necessarily occur after the fourth round of groundwater sampling occurs in October 2013 and the final data report is received in early 2014.

**National Remedy and Review Board Recommendations**

10. What studies/investigation did the National Remedy and Review Board recommend EPA Region 7 conduct to better understand the West Lake Landfill? Please include all recommendations from the NRRB.

**A.** The NRRB recommended that: the excavation volume for a full removal of the radiological material be calculated; a partial excavation alternative be evaluated; treatment technologies for the waste involving apatite and/or phosphate be evaluated; the present value costs for all alternatives be recalculated using a 7% discount rate; alternative landfill cap designs be evaluated; and fate and transport modeling of radionuclides in groundwater be conducted. EPA Region 7 asked the PRPs to do these additional studies in a letter dated October 12, 2012. The PRPs have agreed to do these studies.

11. Did EPA Region 7 provide the NRRB with concerns or reports from the general public?

**A.** Region 7 informed the NRRB that the Supplemental Feasibility Study was conducted to address continuing concerns expressed by the public about the ROD-selected remedy.

12. Did Region 7 provide NRRB with Dr. Bob Criss' report submitted to the EPA on March 15, 2013?

**A.** No. Region 7's consultation with the NRRB, and the NRRB's comments, occurred well before EPA received this document. The NRRB does not have an ongoing role in the management of the site; its function is to review a proposed remedy.

13. What information has the NRRB received as it relates to the subsurface smoldering event?

**A.** None. The NRRB does not have an ongoing role in the management of the site; its function is to review a proposed remedy.

14. Has the presence of the subsurface smoldering event triggered further recommendations from the NRRB as it relates to OU-1?

**A.** No. The NRRB does not have an ongoing role in the management of the site; its function is to review a proposed remedy. Future NRRB consultations will include this information as appropriate.

**Radium in Groundwater**

15. Can the EPA explain why levels of Radium-226 and Radium-228 are above the Maximum Contaminant Level (MCL) throughout the landfill, outside of Operable Unit 1? For example: The Responsiveness Summary from 2008 (page 3) states "only four wells exhibited a total radium concentration above the MCL of 5 picocuries per liter (pCi/L)" with the maximum reading being 6.33 pCi/L. A map in the Groundwater Monitoring report dated December 14th displays 20 wells that show radium levels above 5pCi/l with PZ-101-SS reading 32.01pCi/L, which is outside of Area-1 and Area-2 of Operable Unit 1.

**A.** EPA assesses the 2012 groundwater data as not proving or disproving the existence of a groundwater contaminant plume at the site. For this reason, EPA has requested that the PRPs conduct three additional rounds of groundwater sampling in 2013 which will enable USGS to provide a more comprehensive picture of current groundwater conditions at the site.

16. With the increase in the concentration of Radium found the wells, how can the EPA continue to state that the levels of Radium being read are naturally occurring, as the EPA stated at the January 17 public meeting at the Machinists Union Hall?

**A.** EPA is obtaining assistance from the USGS to interpret the groundwater results from the 2012 and upcoming 2013 sampling events and to determine the background contribution to contaminant concentrations in the aquifer beneath the site.

17. If there is "little to no Ra-228" in the landfill waste at West Lake Landfill OU-1,

where is the Radium 228 in the groundwater coming from?

**A.** EPA is obtaining assistance from the USGS to understand and interpret the groundwater results from the 2012 and upcoming 2013 sampling events and determine the background contribution to contaminant concentrations in the aquifer beneath the site.

18. How can the EPA assert that "recent groundwater results indicate that contamination is not migrating substantial distances from its original location where the radioactive waste was disposed" when wells outside of OU-1 and OU-2 consistently read radium levels higher than the MCL and no reports of off-site testing have yet been posted?

**A.** It is EPA's position that the 2012 and 2013 groundwater data do not prove or disprove the existence of a groundwater contaminant plume at the site. For this reason, EPA has requested that the PRPs conduct three additional rounds of groundwater sampling in 2013 to provide a more comprehensive picture of current groundwater conditions at the site. EPA collected off-site groundwater samples at six private wells more than one mile northeast of West Lake in July 2013 to help assess background concentrations of contaminants in the alluvial aquifer. These wells were chosen because they are the closest to the site.

[NOTE: The Missouri Coalition letter received by EPA did not contain questions numbered 19 or 20.]

21. What testing protocol or investigation will be needed to ascertain the source of the radioactivity in the groundwater?

**A.** The four quarterly site-wide groundwater sampling events, along with USGS' interpretation of this data, are intended to do this. Existing data from the 2000 Remedial Investigation and other historical reports will be also be used as necessary.

22. In the groundwater reports from tests in August 2012 and April 2013, the EPA posted data for both combined total radium 226 and 228 and combined dissolved radium 226 and 228. It is our understanding that total radium comes from unfiltered samples while dissolved radium is gathered from filtered samples, thus the total radium should be higher than the dissolved radium for its respective sampling location. How does the EPA account for the last two groundwater reports reading higher dissolved radium than total radium in 30% of the wells?

**A.** Your understanding of this issue is correct. Both EPA and USGS have considered this issue and its potential causes, including variations in groundwater concentrations during the sampling process and the procedures for handling the samples once they have been collected. Sample handling procedures were changed slightly for the July 2013 sampling event to minimize any chance that sample handling may have contributed to total radium results exceeding dissolved radium results in some previous samples.

**Long Term Risks**

23. The EPA said in its response: "The EPA is overseeing work by the potentially responsible parties which includes the evaluation of risk associated with multiple disasters such as fire, tornado, and earthquake." Is the EPA or PRPs working on a new Risk Assessment for West Lake Landfill? If so, when will it be published? If not, does the EPA intend to provide a new Risk Assessment that includes landfill fire risks?

**A.** The evaluation of these risks will be presented in the Supplemental SFS report, along with the results of the six studies recommended by the NRRB. Region 7 requested that the PRPs perform this additional work, and they agreed to do so.

24. Is the EPA or PRPs taking into consideration the possibility of concurrent disasters taking place in its risk assessment?

**A.** The PRPs are evaluating multiple disaster scenarios in the Supplemental SFS.

[NOTE: The Missouri Coalition letter received by EPA did not contain questions numbered 25, 26 or 27.]

**Leached Barium Sulfate**

28. In the EPA response on Leached Barium Sulfate, too many assumptions are made and more clarity is needed. The EPA's justification that Cotter Corporation found the materials valuable and therefore "it is likely that very little of this material was left onsite" is an inadequate assumption about what was actually dumped at the West Lake Landfill as it relates to public health. Also, Atomic Energy Commission documents appear to contradict the basis of what was mixed with the 8,700 tons of Leached Barium Sulfate. It's MCE's understanding the material eventually shipped to Colorado sat outside, unprotected from the elements for years. Has the EPA considered the possibility that the soils from Latty Avenue contain highly soluble radioisotopes based on the exposure of the material at Latty to heavy rains over the course of several years?

**A.** It is likely that the soil removed from the Latty Avenue site and mixed with the barium sulfate residue contained residual amounts of the other radiological wastes stored there. However, it is impossible to say how much radiological material this soil contained or the processes by which the radiological material may have interacted with the soil. EPA has extensive analytical results for the materials actually present in West Lake Landfill, and these results are appropriate for use in remedy selection.

29. The EPA's understanding of what was dumped at the West Lake Landfill is inaccurate as recently as 2008 based on the Atomic Energy Commission's 1974 investigation of Latty Avenue, which has been shared with EPA Region 7. Does the EPA plan to continue basing its understanding of what was dumped at West Lake Landfill on what appear to be inaccurate NRC reports?

**A.** EPA is relying on the NRC's report for an accounting of this material. EPA would prefer that samples of the original residue had been analyzed. However, EPA was not the lead agency on the Site at that time. NRC has well-established expertise in assessing radiological sites, and despite speculation by the commenter to the contrary, no credible evidence refutes NRC's conclusion that leached barium sulfate residue was placed in the West Lake Landfill.

30. Has the EPA analyzed the West Lake Landfill as recommended by Dr. Criss in point 8 of his report submitted March 15, 2013? If so, where in the volumes of reports on West Lake Landfill can this information be found? EPA's guidance here is most appreciated.

"Additional study of the site is needed. The character of the radioactive materials and processing wastes originally dumped at West Lake Landfill needs to be determined. Relevant, old chemical and

radiological analyses of these materials probably exist, and physical samples may still exist. In lieu of these being found, radioactively-contaminated material from the landfill needs to be excavated and collected, processed by standard mineral separation techniques, and then analyzed and examined to determine the chemical, physical and radiological character of the separates of concern. Accurate determination of elemental ratios including Ra/Ba, Ra/U, Ba/U, Th/U, Ba/SO4, etc. by ICP-MS and other modern techniques would clearly help. Groundwater analyses need to include major elements, physical parameters such as electrical conductivity, and stable isotope data so that radionuclides can be definitively traced to their sources by well-understood methods (e.g., Criss, 1999; Hasenmueller and Criss, 2013). It is not acceptable that so little is known about this radwaste after more than 30 years of "study". Regular monitoring of the levels and radionuclide contents of groundwater also need to be undertaken. Several dozen new monitoring sites must be developed to establish conditions at least 1000 feet away from the landfill boundaries, particularly north and northwest of Area 2, to establish the scale of groundwater contamination and migration."

**A.** EPA is relying on the NRC's report for an accounting of this material. EPA would prefer that samples of the original residue had been analyzed. However, EPA was not the lead agency on the Site at that time. NRC has well-established expertise in assessing radiological sites, and despite speculation by the commenter to the contrary, no credible evidence refutes NRC's conclusion that leached barium sulfate residue was placed in the West Lake Landfill. The commenter's suggestion here that samples of the radiologically contaminated material within the landfill should be dug up and analyzed now to obtain results indicative of the original barium sulfate waste is not sound scientifically. This material has been in contact with a diverse mixture of soils, municipal solid waste, and other wastes in uncontrolled conditions for the past forty years. The original radiological material has been unavoidably altered by this contact, and there is no way the material could be reliably "re-constituted" now.

31. Was inductively coupled plasma mass spectrometry (ICP-MS) used to analyze soil samples in OU-1?

**A.** No. Isotopes of radium, thorium and uranium cannot be measured by ICP-MS. They are measured using methods that analyze the radioactive emissions of these elements (primarily alpha spectrometry). Priority pollutant metals (including barium, copper, lead, mercury, etc) in soil were measured using EPA Method 6010, which uses inductively coupled plasma – atomic emission spectrometry (ICP-AES). Volatile and semi-volatile organic compounds cannot be measured by ICP-MS.

**Perimeter Fence**

32. Why was the fence along OU-1 Area 1 moved closer to the St. Charles Rock Road?

**A.** In March 2013, EPA requested that the PRPs install a fence on the southeast side of OU-1 Area 1, between this landfill cell and the adjacent North Quarry Landfill cell, to prevent workers responding to the subsurface oxidation event at the Bridgeton Sanitary Landfill from accidentally entering Area 1. The PRPs agreed to do this, and they also decided to upgrade existing perimeter fences around both OU-1 areas at the same time.

33. When was the new fence constructed?

**A.** The fence installation began in late May 2013 and concluded in June.

34. By whose order?

**A.** The PRPs decided to upgrade existing perimeter fences around both OU-1 areas at the same time they were installing the fence EPA requested between OU-1 Area 1 and the adjacent North Quarry Landfill cell.

**Community Interviews**

35. Can EPA provide evidence on its website to support that community interviews were conducted between 1994 and 2013?

A. EPA has conducted formal and informal interviews throughout the history of the West Lake Landfill Superfund Site within the timeframe addressed. Interviews were conducted in concert with the initial Community Involvement Plan by an EPA contractor who was housed in St. Louis, Missouri in 1994. In 2006, EPA held two public meetings where comments were shared by community members. In 2008, another public meeting was held where comments were again shared. In the fall of 2011, the Community Involvement Plan was updated and phone interviews were conducted to gauge comments and concerns. In January 2013 and June 2013 public meetings were held where community members weighed in with comments and concerns. In March 2013 EPA's Environmental Justice program made contact with several individuals that attended EPA's January meeting to discern how individual neighborhood residents and businesses receive their information.

   EPA does not place community interviews and/or responses on its website for any Superfund site. EPA has maintained a consistent communication exchange with Bridgeton and surrounding cities at all community levels, including mayors, boards, individual residents, and health institutes over the past two decades. Also, in maintaining transparency, our Region 7 office has a toll-free phone number for community members to use to share concerns and recommendations.

36. How have the community interviews guided the EPA's response to community concerns? This question was not answered in the EPA's last response.

**A.** As a result of recent community interviews, it was determined that the community preferred face-to-face meetings to on-line "town hall" meetings. EPA plans to hold further face-to-face meetings with the community to respond to their concerns.

37. EPA Superfund decision making is supposed to be guided in part by what local communities want. How does EPA qualify and/or quantify community concerns or preferred remedial action when creating a Record of Decision, or in this case, an amended ROD?

**A.** EPA will evaluate the new groundwater data and the additional analyses the PRPs are doing. EPA will present this information to the National Remedy Review Board, and then will hold a public meeting and comment period for the new proposed plan. EPA is required to respond to all public comments received during the public comment period.

**Public Record**

38. Will the EPA provide digital records on its website of all documents in the "administrative record" and "public record" concerning West Lake Landfill?

**A.** EPA recently assessed the condition of the Administrative Record stored in Bridgeton and determined that access to these documents needs to be improved. EPA is considering options for improving access and/or placing these documents on our webpage.

39. Does the EPA have different delineations for "administrative record" and "public record?"

A. No, the Administrative Record is the record to support EPA decisions and is made available to the public.

**Other Superfund Sites**

40. How many Superfund Sites in Region 7 involve radiological contamination?

A. There are five sites in the Superfund remedial program in Region 7 with radiological contamination: the St. Louis Airport Sites (SLAPS), West Lake Landfill, Weldon Springs, the Lake City Army Ammunition Plant (LCAAP) and the Iowa Army Ammunition Plant (IAAAP).

41. Has EPA Region 7 executed a ROD at a radioactive Superfund Site? If so, which ones and when?

**A.** ROD-selected remedial actions for radiological contamination have been implemented at Weldon Springs (1997-2001), Iowa Army Ammunition Plant (RA ongoing now), the St. Louis Airport Sites (RA ongoing now), and Lake City Army Ammunition Plant (2008-2009).

**Schedule**

42. Does the EPA have a schedule moving forward that it can provide regarding the decision making process?

**A.** After PRPs complete additional work which EPA had requested (one more groundwater monitoring event in 2013, preparation of six studies in 2014), steps remaining in the decision making process include:

- PRPs submit supplement to SFS to take into account results of additional work.
- EPA consults with NRRB about Proposed Plan.
- EPA issues Proposed Plan which identifies changes to 2008 ROD remedy.
- Public comments on plan and public meeting held.
- EPA issues amended ROD based on Proposed Plan and public comments.
- EPA resumes negotiations of Consent Decree with PRPs.
- DOJ lodges negotiated Consent Decree with Court, publishes notice and takes public comment.
- EPA/DOJ respond to public comment and DOJ files motion to enter.
- Assuming Court enters Consent Decree, implementation of the remedy begins.

## STEPS TO REMEDY IMPLEMENTATION IN ACCORDANCE WITH NCP

- PRPs submit supplement to SFS to take into account results of additional work.
- EPA consults with NRRB about Proposed Plan.
- EPA issues Proposed Plan which identifies changes to 2008 ROD remedy.
- Notice of public comments on Proposed Plan is issued and public meeting held.
- EPA considers public comments and issues amended ROD.
- EPA resumes negotiations of Consent Decree with PRPs.
- DOJ lodges negotiated Consent Decree with Court, publishes notice of public comment period.
- EPA/DOJ consider public comments and if settlement still deemed in the public interest, DOJ files motion to enter Consent Decree.
- Assuming Court enters Consent Decree, implementation of the remedy begins.

OFFICE OF THE COUNTY EXECUTIVE
SAINT LOUIS COUNTY
41 SOUTH CENTRAL AVENUE
SAINT LOUIS, MISSOURI 63105

CHARLIE A. DOOLEY
COUNTY EXECUTIVE

(314) 615-7016
TTY (314) 615-4411

August 5, 2013

Mr. Karl Brooks, Administrator
US EPA Region VII
11201 Renner Blvd
Lenexa, KS 66219

Re: Radium Contamination in Groundwater
Bridgeton/Westlake Landfills

Dear Administrator Brooks:

St. Louis County is aware that radium contamination has been detected in groundwater samples around the Westlake and Bridgeton Landfills. St. Louis County also understands that the radium contamination is not anticipated from the known contaminants deposited in those landfills.

The purpose of this correspondence is to stress St. Louis County's concerns about the source and extent of this radium contamination. St. Louis County recognizes that EPA VII is working with the environmental and health agencies of Missouri to try to resolve the radium presence. St. Louis County is also aware that the USGS is partnering with EPA VII on the Westlake efforts.

St. Louis County strongly encourages EPA VII to work with its partners to expeditiously determine the source and extent of the radium contamination as well as its acute and chronic health effects on the residents of St. Louis County, especially those in the immediate proximity of the two landfills.

We also continue to have great concerns regarding the subsurface smoldering event at the landfill and the potential environmental and health impacts this event has created.

My staff and I would appreciate a response and briefing about the efforts to date and planned efforts to alleviate our concerns. Thank you for your assistance.

Sincerely,

Charlie A. Dooley
County Executive

cc: Senator Roy Blunt, United States Senate
Congressman William Lacy Clay, Jr., 1st Congressional District
Garry W. Earls, Chief Operating Officer, St. Louis County
Jonathan D. Garoutte, Chief, Bureau of Epidemiology, Mo DHSS
Dr. Dolores Gunn, Director, St. Louis County Department of Health
Senator Claire McCaskill, United States Senate
Leanne Tippett Mosby, Director, Division of Environmental Quality, MoDNR
Congresswoman Ann Wagner, 2nd Congressional District

CAD:tpc